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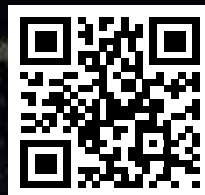
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SOCIAL MEDIA MANAGER Mike Sabounchi

PRODUCTION EDITOR Josh Ching

ART

ART DIRECTOR Alina Avanesyan

CONTRIBUTORS

Bryan Joslin, Rory Jurnecka, Ryan Jurnecka, Ian Kuah, Doug Neilson,
Colin Ryan, James Tate, Ezekiel Wheeler, Pete Wu, Matt Zuchowski

THE SUPER STREET NETWORK ON THE WEB

www.europeancarweb.com

www.superstreetonline.com

MANUFACTURING & PRODUCTION OPERATIONS

VP, MANUFACTURING & AD OPERATIONS Greg Parnell

SENIOR DIRECTOR, AD OPERATIONS Pauline Atwood

ARCHIVIST Thomas Voehringer

ADVERTISING

GENERAL MANAGER, SUPER STREET NETWORK Mark Han

ASSOCIATE GENERAL MANAGER Willie Yee

ADVERTISING OPERATIONS COORDINATOR Dhanusha Manoharan, Teri Hancock

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SVP, CIRCULATION Tom Slater

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The Geek Shall Inherit the Earth

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Congrats, you're now firmly entered into the brotherhood of douches.

-Facebook user

This is an actual comment posted on *European Car's* Facebook page earlier this week. Even with the amount of time I spend interacting with readers and commenters, I am still shocked at some people's callousness in a public forum. When I responded to the user, who shall remain nameless, I asked if using a proper technical term is what made me a "douche." He confirmed it was and could not offer a better way to express that a damper was in fact magnetorheological without using that word, but apparently I "didn't have to be a douche to do it." He ended by saying, "Clearly that's your thing though, so enjoy."

Well you know what, it is my thing and I do enjoy it.

"If someone has something in his life so terrible that it makes him lash out at people on Facebook, in real life, or wherever, I pity the poor bastard."

I've always been good at math and science. I was in advanced placement classes, and not only did I get good grades in science, I genuinely enjoyed the classes. I still read science books and websites for fun. Because of this, I have been called nerd, geek, and various other names more times than I can count, even using one of my HP scientific calculators.

Adding "douche" to the list is no different. I learned pretty early on that the person doing the name-calling is generally compensating for some insecurity in his own life. In grade school, other kids were playing little league or Pop Warner football. I was building and modifying radio-controlled cars.

In high school, other teens were sneaking beer out of their parents' refrigerators while my group of friends had moved on to modifying real cars. In college, when most students were having trouble making it to class because of a late night at the bar, I was dragging myself to class after a long night in the machine shop. Most of my contemporaries in college worked retail. My first job was doing materials science research for NASA. These days, you may or may not have heard of them. After that, I was working for a sports car company famous for building cars named after snakes. I admit, to this day, I'm still not good at folding shirts. Clearly, I missed out on a learning opportunity.

I was the butt of jokes then and I guess occasionally, I still am now. But look, if someone has something in his life so terrible that it makes him lash out at people

on Facebook, in real life, or wherever, I pity the poor bastard. But this isn't about me or even this particular guy online.

I want to address the people of all ages who excel in and enjoy math and science and might be discouraged by guys like this. There has been a lot of talk about this lately, and I feel I can throw in a fairly qualified two cents. When this guy said, "If that's your thing," he was talking about being intellectual and not being afraid to express it. That is very much my thing. I'm not embarrassed to have a passion for cars, a proclivity for the technology, and an aspiration to educate; that is my thing and I love doing it. He might believe his thing is being snarky online, but I would hope that's not all a person is capable of delivering. My guess is he was probably teased or bullied at some point. Maybe to the point of being embarrassed of his real passion, or maybe he hasn't even discovered yet. Either way, I can't believe the act of cyber-heckling is really fulfilling the basic human desire to create or express one's self. If in fact his thing is calling people names online, I hope it serves him well, because my thing has served me very well.

I travel the world driving cars before most people have ever had the chance to see them in person. It does involve too much time away from my family, sometimes feeling like I live in airports. (I am writing this sitting in the Frankfurt Airport during a particularly grueling six-hour layover.) While this probably doesn't sound like a bad trade-off to most readers, I guarantee this life isn't for everyone. In fact, there are several people who don't make it long in this field simply because of the long hours, constant pressure of looming deadlines, and extensive travel.

But if you are feeling sympathy, you have it all wrong. This is my thing and I love it. I get to interact with people like me, people who have dedicated their lives to their passion. In my experience, those are the people you want to be around. People who know who they are and aren't ashamed to let the world know.

I get to not only experience great cars in incredible places, but I get to share the experience and hopefully, every once in a while, teach someone something. That's my thing and I hope to keep doing it, regardless of what others think. I hope I might be able to convince a few others to do the same.

Michael Febbo, Editor
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MAGNAFLOW SPORT EXHAUST

"Adds more bark" to the '15 BMW M3 and M4, says Magnaflow when describing its new 50-state-legal, stainless steel cat-back exhaust system. The company also claims gains of up to 10 hp and 12 lb-ft of torque from this mandrel-bent setup designed to be fitted using just jackstands—or a garage lift would also be fine. The factory valves are retained, so the driver can choose to be as quiet as an M-powered mouse or make a louder statement. Available in black or titanium finishes. From **\$2,793**. magnaflow.com



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Sometimes a gadget makes you want to go racing just so you can buy it. This is one of those times. It's Auto Meter's 7-inch, TFT LCD dash unit. Weighing just 1.5 pounds and housed in a carbon composite shell that is IP65 sealed (meaning no dust or moisture will ever get in, ever), it can cope with 20 g of continuous vibration and a shock of 50 g. An onboard photo sensor means it's always readable in any light conditions, so the info from up to 12 sensors should be easy to take in. There's even a predictive lap time function, plus virtual analog needles, configurable layouts, and a ton of other useful features. **\$4,300**. autometer.com

STAND 21 ST121 RACING SUIT

Look around any motorsport paddock and it won't be long until a Stand 21 product comes into view. This French company makes a lot of great racing stuff. The ST121 suit is an evolution of the successful ST021, and it's made from triple-thickness aramid and features stretchy arms and extra comfort around the back. It can be made to measure and Stand 21 will even add the buyer's markings of choice. **\$1,050**. stand21na.com



RUDY PROJECT SUNGLASSES

Rudy Projects is an Italian company that makes helmets. Erm, cycling helmets. Nevertheless, those of us who prefer things with four wheels might still perch a pair of these on their nose. The makers claim that these new shades in their Casual Collection are extremely lightweight, with high clarity optical technology, and offer superior protection against UV rays or impact. They can also be available with a prescription. From **\$149.99**. e-rudy.com



FORGE MOTORSPORT BOOST HOSE KIT

Here's an upgrade for the 2.0L turbo engine in the current (B8) Audi A4: race-quality boost hoses. They're modeled on their OEM counterparts, so they're simple to install, but their woven fabric reinforcement means they can withstand higher temperatures and boost levels, as well as last longer than the factory hoses. Available in black, blue, or red. **\$210**. foragemotorsport.com

KLÄSSEN ID COMPETITION SERIES ALLOY WHEELS

Heat-treated, aerospace-grade 6061-T6 forged aluminum wheels machined specifically for the F12 BMW M6... what's not to love? They're even made in the good old USA. Diameters range from 19 to 20 inches, widths and offsets can be custom-tailored, and each of the designs has enough clearance for larger brake calipers and discs. There is a multi-spoke version (pictured), a Y-spoke, and a five double-spoke model. They can be finished in Midnight Frost to complement the M6 in Alpine White. From **\$1,500 per wheel**.

klassenid.com



REMUS SPORT EXHAUST SYSTEM

The F8x BMW M3/M4 is about to sound better thanks to this made-in-Austria stainless steel system from Remus. The X-pipe and connecting pipe are a tad wider than stock and eliminate the front silencer and secondary catalytic converters. The result is an extra rumble and an amplified turbo spool. The system works with the Sport and Sport+ modes so the valves are still in place for swapping between subdued and full-throated. It's available in an axle-back configuration (just the rear silencer and tips) going up to the full downpiped monty with titanium internals. From **\$2,823 to \$4,445**. remususa.com





BAVARIAN AUTOSPORT MOBILE DEVICE HOLDER

It doesn't make an E90 BMW any quicker, but it could make driving easier. This clever little thing attaches to the pop-out cupholder in E90 BMW dashes and allows the user to clip in a smartphone or GPS screen to make it more visible. It means a shorter distance for the eyes to travel between road and display, but retains the ability to hold a coffee cup (or soda can, etc.). It adjusts to accommodate devices of various sizes and pivots for perfect positioning. **\$29.95.** bavauto.com

PORSCHE AERO KIT

And now for some OEM goodness. Porsche has a new aero setup for the 911 Turbo and Turbo S that can, it is claimed, add up to 40 pounds of downforce without adversely affecting the stock drag coefficient (0.31, incidentally). Developed on the track and in the Weissach wind tunnel, the kit includes a front spoiler, a winglet-bedecked fixed rear spoiler, and a rear fascia. These parts are available as color-coded or in high-gloss black. Buy it as part of a new car and the cost is \$6,950. Or get it for a retrofit for \$6,886 (minus paint finish, assembly, and installation); if this is done through Porsche Tequipment and installed at an authorized Porsche dealer, the vehicle warranty stands.

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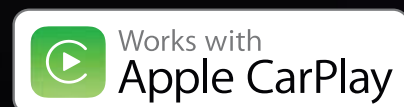
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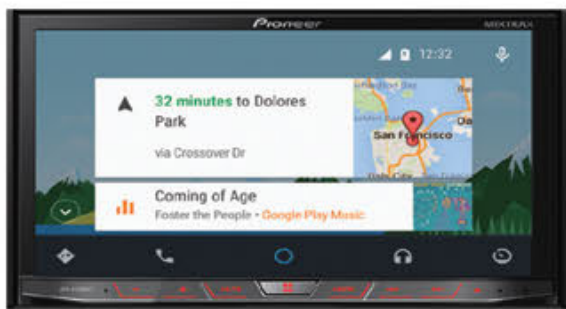
Pioneer keeps you connected in more ways than one with NEX.



Smartphones may have put the power in your hands, but it's amazing how quickly we become disconnected once we enter our vehicles. To solve this problem, the forward-thinkers at Pioneer released their next generation Network Entertainment eXperience (NEX) in-dash receivers that will surely keep you connected and back in control.

It comes as no surprise that Pioneer is among the first aftermarket manufacturers to have an interface that extends smartphone capabilities to your car, whether you own the latest iOS phone or the newest

Android™ device. All five NEX models include Apple CarPlay™, the smarter, safer and fun way to use an iPhone® in the car. And, three of the models are now also Android Auto™ compatible, which extends the Android platform in a way that is purpose-built for driving. Plus, each receiver in the line includes Pioneer's AppRadio® Mode, advanced Bluetooth® capabilities, MirrorLink® compatibility, Pandora® internet radio, SiriusXM Ready™, iDataLink® Maestro™ support, and FLAC file playback.



Android Auto

If you have an Android phone (running OS 5.0 or newer), you'll be happy to hear three out of the five NEX models let you quickly initiate the new Android Auto, which extends the Android platform into the car utilizing a simple and intuitive interface along with powerful new voice actions to minimize distraction, so you can stay focused on the road. What you get on the Pioneer screen is something familiar to most Android users – a card-based interface that delivers key information as you drive.

(AVIC-8100NEX, AVIC-7100NEX, AND AVH-4100NEX)



Apple CarPlay

Conveniently, every model in the line is ready for connection with iOS 7.1 or newer installed on an iPhone® 5 or later, including iPhone 6 Plus and iPhone 6, giving you the ability to use Siri® voice control to make and receive calls, compose and respond to text messages, access Apple Maps for navigation, and listen to music, podcasts, and iTunes Radio.

(ALL MODELS)

Touch Panel Displays Optimized For Smartphone Integration

The power of touch is available in each NEX receiver. The flagship AVIC-8100NEX offers a capacitive WVGA touchscreen display, and the remaining models feature a new clear resistive WVGA touch panel that provides brighter, more vibrant colors and increased touch sensitivity, making it more responsive than traditional resistive touch panels.

(ALL MODELS)



SiriusXM Ready

For endless audio entertainment, all models are equipped to receive SiriusXM satellite signal for commercial-free music, plus premier sports and live events, comedy, news, exclusive talk and entertainment. Through the SiriusXM SXV300 Connect Vehicle Tuner (sold separately, SiriusXM subscription required), you'll get SiriusXM programming with TuneMix™, SportsFlash™ and Traffic & Weather Now™.

(ALL MODELS)

FLAC Playback Compatibility

With high resolution audio listening on an upswing, the NEX models are built to play back FLAC files. These in-dash receivers are the first in the industry to offer playback of files encoded as high-res FLAC up to 192kHz/24 bit and provide playback output at CD quality.

(ALL MODELS)



'15 Land Rover Discovery Sport

FROZEN—GOT A PRECONCEIVED NOTION OF LAND ROVER? LET IT GO.

Words Bryan Joslin
Photos Bryan Joslin & Land Rover

The Discovery never really went away, but the name certainly did. At least in North America. Elsewhere in the world, the vehicles we know as the LR3 and LR4 were sold as Discovery 3 and Discovery 4. And yes, that bloodline has proven undeniably masterful in some of the most grueling global expeditions ever conceived. Events like the Camel Trophy and G4 Challenge.

The '15 Land Rover Discovery Sport here is not the successor to that lineage. In reality, it's the third generation of the compact Freelander range (the second-gen version was the LR2) that Land Rover has now pushed under the umbrella of an expanded multi-model Discovery lineup.

Whatever the name or heritage, the Discovery Sport represents the current jumping-on point for the Land Rover brand. Based in part on the Range Rover Evoque, the two share front structure and mechanicals up to the A-pillar, but the Discovery then possesses a more practical anatomy with a surprisingly spacious cabin and seating for up to seven. Like the Evoque, it's also far more capable in the real world than might be expected, as we discovered (no pun intended) trekking over Iceland. In winter.

Iceland is a place of uncommon beauty and a land of immense contrast. Snow falls here daily in the winter months, depositing fresh layers of immaculate white powder on nearly coal-black volcanic soil. Cold winds steal a body's warmth, yet heat escapes from the ground.

The Discovery Sport is something of a dichotomy as well. On the one hand, it's immediately recognizable as part of a new generation of Land Rovers, with smooth surfaces, chiseled "face" and stubby overhangs. Yet it looks nothing like any other Land Rover, let alone the iconic Discovery from where it gets its name. Or the quirky LR2 with which it shares its lineage. If anything, it looks somewhat ordinary, considering its ancestors' funky silhouettes and penchant for asymmetry.





Like the nearly treeless landscape, the Discovery Sport exudes a kind of minimalism bordering on sterility. There is nothing controversial about its appearance (OK, maybe the fact that the lighting resembles some recent Ford products), but it evokes serenity. Outside and in, it is clean and modern. There is a beauty to its simplicity. Many designers today overwork a car's sheetmetal with superfluous surfacing; the Land Rover team has exercised restraint.

They've also resisted the urge to trim the interior like a stuffy old English club, forgoing altogether any hint of wood veneer in favor of more technical metallic accents. Leather still features extensively, albeit more toned down than in a Range Rover. Plastic surfaces look to be tech-inspired rather than trying to simulate tanned hides.

From its inception, the Freelander/LR2 has relied on unibody construction and a transverse-mounted engine—a layout more familiar to family sedans than world-straddling expedition vehicles. This alone has made it an easy target for defenders (another unintended pun) of Land Rover's legacy. The Discovery Sport does nothing to change this state of affairs. And the truth is, Land Rover is OK with it.

This vehicle fills the role once occupied by, of all things, the station wagon. It's a family adventure vehicle, for whatever definition of "adventure" a modern family might envision. It's a kid hauler, daily commuter, family vacation getaway vehicle. If it never leaves the pavement, so what? At least the Disco Sport isn't pretending to be something it's not.

Land Rover enthusiasts may want to know whether this thing is worthy of its badge in off-road



situations. With nearly 13 inches of suspension travel and 23.6 inches of wading depth, the Disco Sport tops all of its competition (BMW X3, Audi Q5, Mercedes-Benz GLK, Volvo XC60) on these key metrics. The Sport wins hands-down on approach and departure angles and also trumps the Germans on ride height and breakover angle, although the Swede bests them all with its additional clearance and breakover.

"The Discovery Sport exudes a kind of minimalism bordering on sterility."

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Like all recent Land Rovers, the Discovery Sport uses the most current version on the company's Terrain Response system to modulate throttle, braking, stability control, and steering response through a simple push-button selector on the center console. This electronic traction system isn't so much a substitute for a proper low-range transfer case as it is a way to help the driver maintain control of inputs when surfaces are compromised. No low range is offered, but that helps reduce weight and driveline loss in a vehicle that would rarely be called upon to use such a feature.

All models have four standard terrain response profiles—Standard; Grass, Gravel, and Snow; Mud and Ruts; Sand—with an additional high-performance Dynamic mode as part of the Adaptive Dynamics option. Ours was set to Grass, Gravel, and Snow for most of this Icelandic expedition. The setting is a bit aggressive in terms of throttle inputs, but otherwise it worked well getting us through ice and snow.

Most Discovery Sport owners will never deliberately descend a riverbank and plunge the headlights into the icy water with expectations of making it to the other side unscathed, as we did. But the fact that it is designed to do so should provide them with the confidence that they will indeed get through the worst weather to arrive safely at lacrosse practice. Or the mall. Or insert stereotype here.

One attribute that may set the Sport apart from any previous Discovery is its spry performance. Saddled with a mere 4,200 pounds of mass, it feels light on its feet the way most other Land Rovers

never could. Attention has been paid not only to overall weight, but also where that weight is placed, like the use of aluminum on higher points such as the roof, tailgate, and hood.

Handling, the best we can tell given the conditions, is sharp and precise like the Evoque's, but the extra few inches of wheelbase lend it a more refined attitude on rough roads without the need for a complicated air suspension. There are MacPherson struts in front, while the rear uses a revised version of the Evoque's multi-link setup with lighter components and an extra 3.9 inches of track width. MagneRide dampers replace standard gas-charged units when the Adaptive Dynamics option is checked, but all versions have a fixed ride height.

Steering is quick and responsive and requires little effort with standard electric power steering assist. Unlike many EPS systems, this one feels like a good match for the vehicle and its intended drivers, though judging its response in real-world conditions is virtually impossible when driving on ice-covered pavement and gravel while wearing studded snow tires.

For now, the lone powertrain option is the same 2.0L turbocharged four-cylinder gas engine found in the Evoque, paired with a nine-speed automatic transmission and full-time all-wheel drive. Rated at 240 hp and 250 lb-ft, the combination is potent if not groundbreaking. It's enough to hit 60 mph in 7.8 seconds and run out to a terminal velocity of 124 mph. Better still, it allows for up to 26 mpg on the highway. A four-cylinder diesel will eventually enter the lineup, pushing consumption well into the 30s.

TECH SPEC **'15 LAND ROVER** **DISCOVERY SPORT**

BASE PRICE
\$37,995

LAYOUT
Front-engine, AWD, seven-seat, four-door SUV

ENGINE
2.0L, 240 hp @ 5,800 rpm/251 lb-ft @ 1,750 rpm, turbocharged, 16-valve, DOHC I-4

TRANSMISSION
Nine-speed automatic

SUSPENSION
MacPherson strut (f), multi-link (r)

0-60 MPH
7.8 sec.

TOP SPEED
124 mph

ECONOMY
20 mpg city/26 mpg highway (EPA)

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The turbo four-cylinder is peppier on the road than the zero-to-60 numbers might suggest. The small turbocharger seems to always be on boost and it can be difficult at times to modulate the throttle accurately. The ZF gearbox moves swiftly and smoothly through its gears, quick and precise when called upon to downshift.

The all-wheel drive system uses a tried-and-true Haldex center differential to dish out torque across front or rear axles based on traction. The system defaults to primarily front-wheel drive, but can deliver all its torque to either end.

Built on a 107.9-inch wheelbase (coincidentally, the same as the long-wheelbase version of the original Range Rover and more than three inches greater than the Evoque) the priority is on passenger comfort, at least for the first two rows. All America-bound versions will also feature a standard third row with “+2” occasional seating for those times when there’s another kid in the picture.

The view from the front row is expansive, but prior Land Rover owners may lament the loss of the characteristically high seating position found in older models. The Discovery Sport bows to convention (and modern safety requirements) with front seats mounted considerably lower in the bodywork. Second-row passengers sit two inches higher, retaining the brand’s long-standing “theater seating” arrangement.

Four full-size humans want for nothing in terms of space, although a middle passenger in the back will introduce some shoulder conflict. Both powered front seats tilt for ideal positioning and the rear seats recline. If that weren’t enough, the optional full-length glass roof really opens up the interior. It lacks the Alpine windows and stepped roof line of an old Discovery, but the view from inside still offers a wonderful perspective.



The third row is as tight as its “+2” designation suggests. Access to this bonus space (or penalty box, depending on stature and personal elasticity) requires sliding one of the second-row seats fully forward (6.3 inches) on its tracks. The two extra seats themselves are manually deployed, rising out of the floor with a light pull from the cargo area. Once up, the seatbacks and extended headrests block the otherwise decent view through the rear window. Seating comfort is limited to those with a minimal drop between the knees and ankles, and cargo capacity is all but eliminated in this position.

What Land Rover has built in the new Discovery Sport is a highly capable family vehicle more tuned to its market position than ever before. The marque has refined its entry-level offering by abandoning its quirky roots. Few will be offended by this move. With all it offers at a base price of \$37,995, the newest Land Rover will finally gain the respect it deserves, regardless of whether it should be called a Discovery or not. **EC**

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Plush Hour

THE WHISPERING MAYBACH PUTS THE “MUTE” INTO COMMUTE

Words Colin Ryan

This first drive of the '16 Mercedes-Maybach S600 comes not from behind the steering wheel, as most first drives do, but from the rear quarters. Because this is where it's all happening. Especially the reclining seats—with calf support—that bring a new sumptuous level of meaning to the word “plush” and make a first-class air passenger kick himself for slumming it.

Which brings us closer to the optional deep pile carpet and more inclined to sip chilled champagne (stored in a cabinet between the two rear seats) from silver-plated flutes held in place by magnetic “cup” holders. Then we can all appreciate the fact that, from the rear quarters, this is the quietest production limousine in the world (according to Mercedes-Benz).

Several factors go into this mobile oasis of calm. The windows are double glazed, with a heat-reflecting transparent foil acting as the filling in a glass sandwich. And the rear doors are 2.6 inches shorter than the regular S-Class sedan's on which this transport of delight is based. This cuts down on vibration, but doesn't hinder getting in and out. Even the rear seat-belt reels are surrounded in sound insulation.

The C-pillar (where the Maybach badge is situated) is noticeably wider than that of a regular S, but rear quarter-lights prevent the cabin from becoming claustrophobic. When greater privacy is required, a triangular sunshade hums into place, along with shades for the main windows and rear glass.

HIGHLIGHTS

- › Every little detail
- › Build quality
- › Serenity
- › Turbocharged V-12
- › Rear legroom



For the occupant lucky enough to be behind the front passenger seat, that chair can move far forward for maximum rear legroom. Not that sitting behind the driver is the short straw, but we all know where a basketball star and his wife would sit. In either fine leather-covered throne, there's the possibility of a "hot stone" massage (which could be most welcome after a tough game), watching a DVD (each passenger has his/her own video and audio channel) or just chilling out to a Burmester 3-D surround-sound system with the quality, clarity, and power (24 speakers, 1,540 watts) to make a Bose technician want to kick himself.

Here's a nice touch concerning the audio system: There's a microphone in the rearview mirror that picks up what the front occupants are saying and plays it through the rear speakers. This saves someone from turning around to carry on a conversation with those in the back. This is typical of the attention to detail that pervades the Maybach. Example two: the ends of the dashboard, which are only visible when the front doors are open. They could have been covered in vinyl, and it's doubtful that many people would care. But Mercedes would have had collective insomnia if these sections weren't finished in the same quality hide as the rest of the car. Everything that's touched, everything that's seen has been assessed and made as wonderful as it can be.

"Everything that's touched, everything that's seen has been assessed and made as wonderful as it can be."

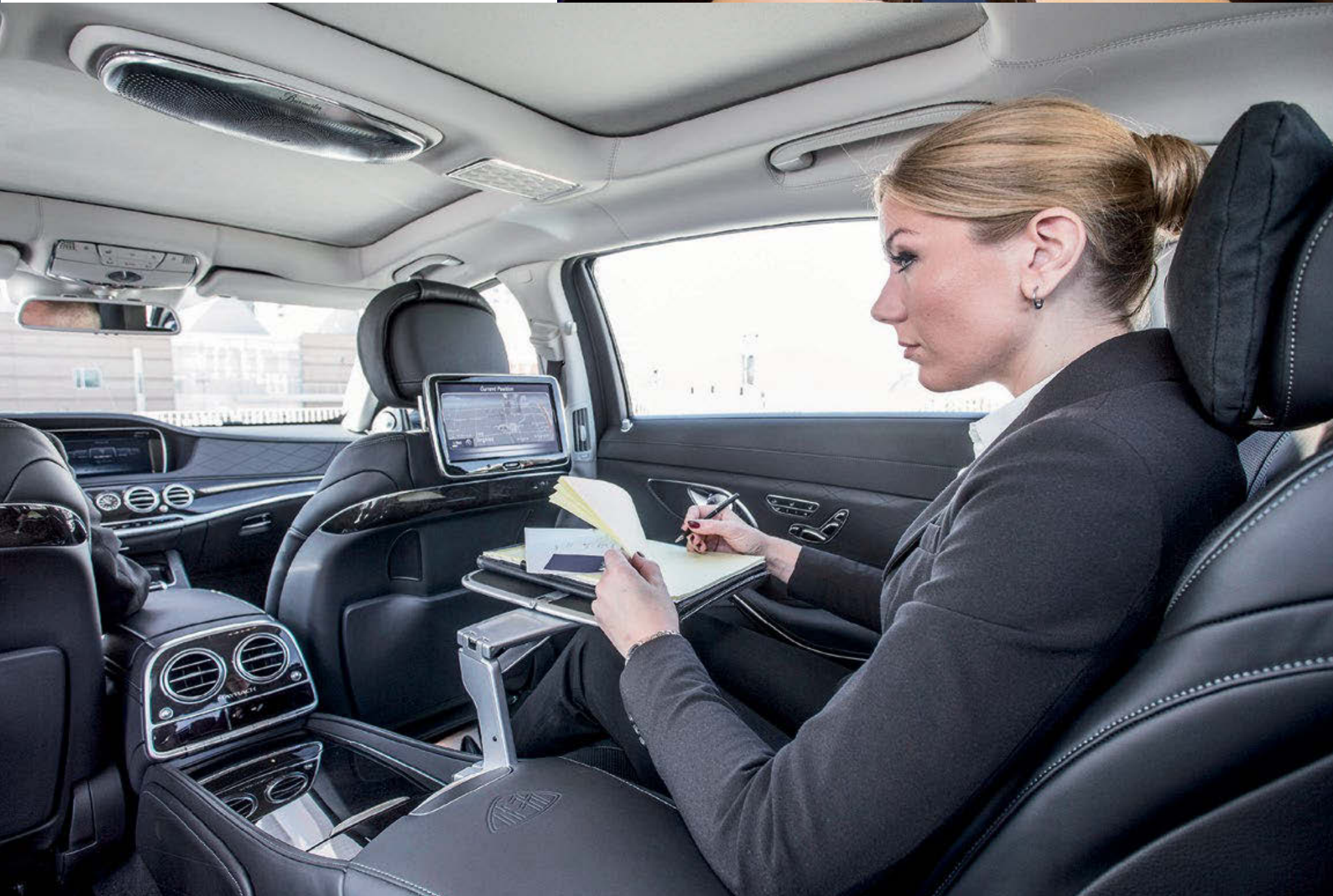




On reflection, this car is perhaps how Mercedes-Benz should have played the Maybach card from the outset. When the company first revived Maybach in 2002, it was a luxury marque based on the S-Class (a generation that was already coming up for renewal) that was intended to slot in at the Rolls-Royce level of things. But the brand didn't mean much outside Germany, where it was one of those venerated names from the 1930s. So it was discontinued in 2012, only to be resurrected now as part of the Mercedes-Maybach sub-brand; just as AMG models are now Mercedes-AMG. What this does is keep the Mercedes name to the forefront. As it should be, because the three-pointed star is synonymous with luxury and exemplary engineering.

Speaking of which, the current S-Class is a technological masterpiece, with systems that will read the road and adjust the suspension accordingly, provide a head-up display, act as a virtual co-driver with intelligent cruise control, plus a raft of other safety and convenience features. They're all here in the Maybach, along with another 7.9 inches of rear legroom compared with the long-wheelbase S, which is the only version imported to the United States. Headroom has expanded a touch, too.

OK, so here's the view from the driver seat. With 530 hp and 612 lb-ft of torque—from a twin-turbo, 6.0L V-12—there's plenty of muscle to make the Maybach feel smaller than it is. Not exactly 3 Series-sized, but enough to tempt a chauffeur to take the interesting way home after a day's work. The car's tidy handling and steering assistance can also be a virtue when having to change lanes abruptly; it'll keep the employers back there unflustered.





TECH SPEC

'16 MERCEDES-MAYBACH S600

BASE PRICE

\$190,275

LAYOUT

Front-engine, RWD, four-pass, four-door, sedan

ENGINE

6.0L 530hp @ 4,900 rpm/612-lb-ft @ 1,900 rpm twin-turbo V-12, 36-valve, SOHC

TRANSMISSION

Seven-speed automatic

SUSPENSION

Double wishbone (f), Multilink (r)

PERFORMANCE

0-62 MPH

5.0 sec.

TOP SPEED

155 mph

ECONOMY

TBA



+ PROS

- › Cossets like a champ
- › On-road gravitas
- › Authoritative power

- CONS

- › As long as you have \$200,000 to spend in the first place, what's not to love?

The list could go on: brushed aluminum exterior window trim; aluminum hood, doors, and trunk lid; color-matched seat control buttons, heated armrests, IWC analogue clock in the dash, an ionizer that carries fragrances on its gentle breezes, leather-covered folding tables, Peltier technology that keeps cold drinks cold and hot drinks hot, a predominantly handbuilt cabin, and airbags within the rear seatbelts. But here's the real kicker. The '16 Mercedes-Maybach S600 starts at \$190,275, including destination. Compare that with a Rolls-Royce Ghost, which is based on the BMW 7 Series and costs \$263,200. Suddenly, the Maybach looks like a bargain. Not a word usually associated with Mercedes-Benz. Or, indeed, ever spending that kind of money.

Naturally, there are ways of parting with more. Options include sunroofs with Magic Sky control (where the glass becomes darker at the touch of a button), and if someone had a specific request—like duck egg blue leather upholstery—no doubt Mercedes would do its best to comply.

Expect more from Mercedes-Maybach in months to come. An all-wheel-drive version is due in June 2015. An even longer, more stately Pullman variant is also on the way. But don't be surprised if a super-luxurious E-Class and GL-Class might also wear the double-M Maybach Manufaktur badge. In the meantime, the Maybach S600 is one of the most pleasant ways of getting from here to there. In any seat. **EC**



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'15 McLaren 650S Spyder

PASSIONS ARE STIRRED BY SOMETHING...ENGLISH?

Words Rory Jurnecka
Photos William Walker

Three years ago, after a week spent in the driver seat of a McLaren MP4-12C, I wondered if it wasn't the best supercar I'd driven to date. Not only was it immensely fast, with 592 hp and 443 lb-ft of torque from the twin-turbo 3.8L V-8, but it was playful and responsive even without completely shutting off its stability and traction control systems. It was also a real dual-personality car: wild when required, serene and comfortable the rest of the time. Its only flaw was that it couldn't quite match the Ferrari on an emotional level—the outright experience just wasn't as gripping.

Ferrari then launched the 458 Speciale, a stripped-down, track-focused take on the standard 458 that magnifies involvement at the slight expense of

day-to-day comfort and usability. McLaren answered that call with its 650S, a car that purports to crank the 12C's dials all the way to 11 without losing any comfort or composure.

The now familiar carbon-fiber tub is retained, along with the usual aluminum subframes at either end. McLaren's revolutionary ProActive Chassis Control is lightly revised in the 650S, but remains the same in basic operation, using dampers linked across the car hydraulically—right front to left rear, left front to right rear—to mitigate body roll without traditional metal antiroll bars. Sensors read driver inputs, yaw angle, and more to adjust spring rates at each corner. The result is super-sharp handling with insanely supple ride comfort.



There are a few changes to the powertrain. The 3.8L, twin-turbo V-8 gains more boost pressure (from the same turbos as before), new valves and pistons, revised cylinder head, different cam timing, and a new freer-flowing exhaust. Horsepower is up to 617 and torque gets an even bigger bump to 500 lb-ft. Meanwhile, the seven-speed dual-clutch gearbox has been reprogrammed for both smoother and quicker shifts.

Visually, the 650S borrows from the million-dollar, 217-mph McLaren P1 hybrid supercar and the 12C-based GT3 racer. The 650S has the former's

headlights and the latter's rear diffuser, plus revised steering, new brake pedal assembly and booster, and a tweaked aero package that increases downforce by as much as 24 percent. All in all, the 650S is a better 12C.

Better doesn't necessarily mean quicker. The 650S here is a tenth of a second slower to 60 mph than the '12 model we tested, but two-tenths of a second quicker in the quarter-mile, with a few extra miles per hour in the trap speed. Around the figure-8, the 650S shows similarly incremental gains over its predecessor, knocking two-tenths of a second off its time at a slightly higher lateral-g average.





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105.1 in.

LENGTH X WIDTH X HEIGHT
177.6 x 74.6 x 47.2 in.

0-60 MPH
3.0 sec.

QUARTER-MILE
10.7 sec. @ 134.0 mph

BRAKING, 60-0 MPH
105 ft.

LATERAL ACCELERATION
1.05 g (avg.)

FIGURE-8
23.1 sec. @ 0.99 g (avg.)

EPA FUEL ECONOMY, CITY/HWY/COMB.
16/22/18 mpg

BASE PRICE
\$283,925

PRICE AS TESTED
\$351,935



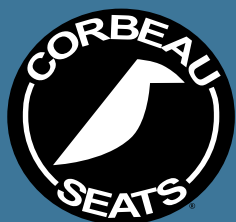
The main difference is in the overall feel of the 650S. No longer is the experience on the sterile side. The new exhaust system really lets the engine's flat-plane crankshaft song be heard, especially with the roof down. Diving into turn after off-camber turn on Southern California's Angeles Crest Highway, the 650S inspires way more confidence than any 617hp, mid-engined supercar has a right to, but it keeps the endorphins running high as well. The now-standard carbon ceramic brakes are sharp under hard use to a point where they wouldn't feel out of place in a purpose-built race machine. And it's always a treat to check the rearview mirror and watch the spoiler tilt upward for air brake action. Gear changes are also more positive than before, with a rifle-bolt action on full-throttle upshifts and ultra-fast downshifts before the next hairpin.

What's most shocking about the McLaren is just how well it plays Targa Florio on back roads, then settles seamlessly into the everyday commuter

routine. A twist of two dials on the center stack labeled "H" (handling) and "P" (power) takes the 650S from racer to runabout in seconds. On long drives home among traffic-clogged freeways, the car is easy to drive, even docile. It's quiet inside, shockingly comfortable, and won't even make a ton of exhaust noise unless pushed. If ever there was a notion of a world-class, daily driveable supercar, this is it. Except for two things.

First, those "butterfly" doors might look cool but, combined with the low roof line and ultra-wide carbon sills, they make getting in and out a bit of a procedure. It takes a few days to acquire the necessary grace, but it will never look entirely natural, and passengers will always complain. Second, the optional race-style bucket seats are probably best suited to those who are only using the car as a toy. The relatively narrow sides and fixed back get tiring on long trips.

Otherwise, there are few things that would prevent someone from using a McLaren 650S every day. **EC**



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'15 BMW X6M

INSANE IN THE FAST LANE—TAKE TWO

Words James Tate

Love it or hate it, the BMW X6 crossover came back last year for a second generation, and the arrival of this year's mind-melting M variant means the line is complete once again. With an absurdly powerful engine and oodles of technology, this SUV (sorry, Sports Activity Coupe) continues its mission of attempting to do everything to the point of madness.

While X6 styling continues to polarize critics, it's hard to argue with a quarter-million sales to date. Plus, the second-generation body does a much better job conveying the "coupe" vibe than its predecessor, which mostly just resembled an X5 painted by Dali. The prominent visual sport-ification brought by the M version—particularly the 21-inch wheels—makes

a big difference in the car's appearance and helps its overall proportions look something like an RC car blown up to life size.

As opposed to the controversial exterior, the interior is by-the-book, top-shelf BMW. Throughout the X6 M's cabin lies a plethora of luxury and technology expected from a vehicle with a price reaching into six figures.

Leather and soft-touch surfaces are everywhere (seriously it's like a leather factory exploded in here), along with M-specific equipment like sport seats, thick-rimmed steering wheel, and the instrument cluster. The cabin is solidly made and the technology sometimes involves a learning curve.



Styling is hardly the main event on a BMW M vehicle, however. The monster heart of the X6 M is a twin-turbocharged V-8 that BMW (ever committed to complicate, elongate, capitalize, and compound any and all nomenclature) is calling "MTwinPower Turbo." The 4.4L, twin-turbocharged V-8 is now capable of delivering a bonkers 567 hp (up 12 hp) from 6,000 to 6,500 rpm and an even more impressive 553 lb-ft of torque spread from 2,200 to 5,000 rpm—a stout increase of 53 lb-ft over the outgoing model. As before, the new engine is lifted largely from the M5 super-sedan, bringing an absurd level of performance technology that feels a little excessive in a luxury crossover. Yet here we are.

"The prominent visual sportification brought by the M version—particularly the 21-inch wheels—makes a big difference in the car's appearance."





+ PROS

- › So much power
- › So much leather

- CONS

- › Identity crisis appearance
- › Rubbery steering isn't the best, but isn't the worst either

Velocity and power are augmented by a roster of stability and performance features, most notably an eight-speed M Steptronic transmission and all-wheel drive system. This new transmission is a traditional torque-converter automatic, obviously not normal for M cars, but it fits the bill well enough given that this is a crossover. That said, it isn't any old slushbox pulled out of the parts bin. This ZF transmission still receives the same thorough performance-oriented massage as the rest of the M car. No fewer than three stability control systems are present, as are the obligatory drive mode options that control the way the car behaves.

More importantly, though, is how all this comes together and how it feels to drive. We spent some time at Texas' very own F1 track, the Circuit of the Americas (COTA). Let's get this out of the way immediately: The X6 M is stupidly, stupidly fast. The torque in particular is crushing, even relative to its immediate predecessor. This giant M car is all too eager to remind you that it's capable of roaring to 60 mph in four seconds flat, no mean feat for a 5,185-pound luxury crossover-coupe-type-thing. Combined with its size, the acceleration experience isn't dissimilar to taking off down the runway in a long-haul plane.

On that note: yes, it's a big, heavy vehicle. That never stops being evident behind the wheel, but it doesn't stop the car from giving the whole "spirited driver's machine" angle a damn good try. BMW M put a rear bias on the all-wheel-drive system. Surprisingly, it shows. We wouldn't go so far as to call its behavior tail-heavy (weight distribution is close to 50/50), but it's remarkable how little understeer is evident on the track.

Likewise, body roll and grip are both excellent through the curves. But there remains the usual electric disconnect in the steering feel, despite it being well-weighted. Almost as if BMW is trying to copy its own claim to fame, there is an on-center heaviness, but it doesn't amount to any additional communication. One might say it feels like there's a low-durometer rubber bushing where the steering column meets the rack. The M Compound brakes offer great pedal feel and hold up well to hard driving (to a reasonable extent), stopping this behemoth confidently even after several hard laps. That's impressive, even given the six-piston front calipers.

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**TECH SPEC****'15 BMW X6 M****LAYOUT**

Front-engine, AWD

ENGINE

4.4L, DOHC, 32-valve V-8 w/twin turbochargers, direct injection

DRIVETRAIN

M Sport eight-speed automatic transmission w/Steptronic

BRAKES

M Compound, six-piston fixed caliper (f), single-piston floating caliper (r)

SUSPENSION

M Suspension, double-joint spring strut axle front (r) Integral-IV axle (r)

WHEELS & TIRES

21x10 (f), 21x11.5 (r) Style 612M wheels; 285/35 (f), 325/30 (r) performance tires

MAX POWER

567 hp @ 6,000 rpm

MAX TORQUE

553 lb-ft @ 2,200 rpm

0-62 MPH

4.0 sec.

TOP SPEED

155 mph (limited)

WEIGHT

5,185 lbs.

ECONOMY

TBC

MSRP

\$103,050 (incl. D&D)



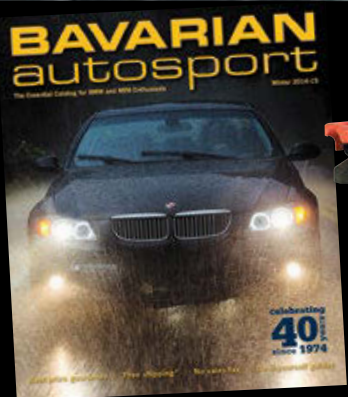
Off the track, the use of normal (not run-flat) tires goes a long way in combating harshness, but it's still a stiff ride, even in the most comfortable of drive modes. It's an incredibly sporty crossover, but that only goes so far. Even as it performs admirably, there's no forgetting that you're sitting on a mountain of a vehicle. As such, it'll never quite gel as a canyon carver. For bombing down the highway, running giggle-inducing errands, or making joyrides into town, however, it's more than adequate. Way more.

The '15 X6 M hits dealer lots by the end of the first quarter and lands with a starting price of \$103,050 (including \$950 destination and handling). Given the niche market, it's hard to discuss its competition. Two upcoming competitors are going after a piece

of BMW's macho crossover pie—the Mercedes-AMG GLE63 S Coupe and the Porsche Cayenne Turbo S—but aside from those, there's not much else out there. The closest realistic segment is the high-power traditional SUV, of which there are a few noteworthy contenders, like the Jeep Grand Cherokee SRT and Mercedes-AMG ML63.

In the end, the X6 M remains a deeply impressive car that struggles for a purpose. Unless the crossover coupe design is an important factor, it's a hard sell over the nearly identical X5 M, which offers basically everything the X6 M does plus some useful space and more conventional looks. But if you're after a "do everything as much as possible" monster and want to stand out with a bit of quirk, look no further. This is your beast. **EC**

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GRC: Global Rally Carpool

WE IMAGINE A VW GOLF SPORTWAGEN ALLTRAK-R

Words & Illustrations
Ezekiel Wheeler

Find a driver who pilots a Porsche and odds are he or she had a VW in their lives at some point. Some use their Volkswagens as mere conveyances, others devote their entire motoring lives to the brand and its growing OEM parts catalog.

When the Golf—the cornerstone of this devotion—entered its seventh generation last year, many were skeptical yet simultaneously excited. The MkV's radical departure from boxiness was an overdue change, but VW couldn't seem to stick with it for too long. The MkVI hit showrooms before the company could fully realize the potential of that more sensual approach. Now the MkVII is here and VW seems to be finding its way back to those familiar and aggressive angles that put the Golf on the map in the late '70s.

Familiar features include the sharp beltline emerging from behind the front fender with the

side marker as the starting point. The slight rise toward the taillights keeps everything composed and balanced. Just above the center of the rear wheel, a familiar shape returns to the VW design language, the side window "kink." Not to be confused with BMW's Hofmeister Kink. Similar, but Giorgetto Giugiaro pulled in details and cut marks straight from the DeTomaso Mangusta.

Today, the MkVII SportWagen seems to exaggerate these heritage elements as they add some width and elegantly cocoon the passengers in a suitable budget family hauler without entering minivan territory. Yes, a SportWagen in GTI, R, or even GTD trim would be welcomed with open arms among enthusiasts across the nation, but we'll hold our collective breath to see which final packages will be heading to the United States.



■■■ behind the lines

What we decided to do was go a bit A6 Allroad with the Euro SportWagen R concept. Choosing a metallic mustard yellow with black accents allows the body's lines to feel a bit more in touch with its heritage and break away from the monotony of red and blue being the only "outlier" colors in the modern VW palette. Charcoal window trim draws the eye to the iconic shape highlighting that rear "kink." Bulging fenders with durable Allroad rocker panel flares help hammer home the versatility features we'd like to add to VW's portfolio and not keep donating pocket change to our Allroad savings jar. Some go-fast bits are sure to be added to any of the turbocharged models we end up modding, and appropriate airflow is needed. By the same token of opening up that front valance, a wider and more menacing look is achieved.

Stance is always appropriate when creating a "utility" machine. Laying the frame down, via static

or air, is bound to pose some long-term problem for those who live in areas with potholed and undulating roads. We chose a more capable rally-inspired adjustable suspension setup with 18x9-inch HRE Vintage Series 501M wheels finished in hunter green.

Practicality, reliability, and aggressive styling are growing pillars of tuning these days. With manufacturers taking personalization more seriously each year, expect an even greater number of crossover parts to enter the catalogs of several brands. VW has been pioneering this method for decades, and its loyal fans around the world have been perfecting it. Porsche and Audi parts eventually find their way onto family VW vehicles, and our take is no different. What we hope to inspire is a generation of modern vehicles that delivers what everyone has been demanding for years: a fair shake at the global VW Group parts bin. Is that so much to ask? **EC**

"Practicality, reliability, and aggressive styling are growing pillars of tuning these days."





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WORDS MICHAEL FEBBO PHOTOS ROBIN TRAVANO



MAGNUS OPUS

SHARKWERKS GT2 GETS A MAGNUS WALKER MAKEOVER

I sold my '81 911 SC on a beautifully sunny and soul-crushing day in March 2014. It left on a flatbed truck, an undignified method for the best sports car in the world to travel. At that moment, it wasn't my favorite 911, even though it was mine. I hadn't driven it for a few years. My favorite 911 is almost always the most recent example I've driven—even if it was a 996 Tiptronic cabriolet. But having just driven both the legendary Magnus Walker 277 '71 911T and a Sharkwerks '08 997 GT2 back to back on some of California's best canyons as well as our test track, how could I choose a favorite now?

The story of 277 is a simple one. Boy meets Porsche, boy modifies Porsche until it is far more than the sum of its parts. The modifier in question is Magnus Walker, who in the last few years has become a bit of a Porsche shaman. Walker is not a typical tuner. He isn't building cars for customers, he isn't building race cars. He's just the guy we would all be, given the chance. He buys the cars he likes and modifies them to his vision. He has a style, but very few rules.

His 911 is similar to other long-hood cars I've driven, but still has a distinct personality. Since its launch, the 911 has been a mass-produced car. Although the numbers in the early days are a fraction of what Porsche puts out today, the cars were still built on an assembly line with identical components pulled from boxes. There should be no illusion that these were handbuilt cars. Today, examples of this vintage and used as the gods intended have become a bit more handbuilt—or maybe hand-rebuilt, to be more accurate.

The majority of this car has been upgraded, repaired, or replaced. This is how the car is shaped. The guy turning the wrenches endows the car with pieces of himself. A car, like a child, is a combination of instinct and environment. Porsche endowed it with a certain amount of nature and then, over time, the nurturing has come from owners.

Walker's nurturing includes suspension refinements that keep the racy aesthetic, along with an interesting engine choice. The easy way with an early 911 is to swap in a newer, fuel-injected engine. It's simple and it works, so it's hard to fault. Walker, on the other hand, likes older, pre-owned race engines found on the relative cheap. His is assembled within a '66 2.0L aluminum case. He has a 66mm crank with 92mm pistons. That totals 2.6 liters of delightfully revvy and almost comically oversquare displacement.

If "stump pulling" is your gauge for low-end torque, the most gardening you'll be doing under 4,000 rpm is uprooting a sickly daisy. It spins to a GT3-like 8,000 rpm, making incredible noises along the way. It breathes through Weber carburetors and the exhaust comprises equal-length headers and a twin-tip muffler—simple and effective.

Suspension specifications are equally straightforward. The only exotic pieces are modified front struts. MacPherson strut suspensions always suffer when the car is lowered. The roll-center (the axis around which the body rotates from cornering forces) drops down the more the car is slammed. It will drop faster than the center of gravity, causing even more body roll. Walker had the front spindle relocated higher on the strut housing. It keeps the suspension geometry the same while lowering the body. It also helps reduce bumpsteer and keeps the wheel in the favorable area of the camber curve. Aside from that, stiffer torsion bars and antiroll bars are used with Bilstein Sport dampers.

The wheels are a collaboration with Fifteen52, a company renowned for being on the cutting edge and creating trends. The design looks like a typical Fuchs, but with the raised spoke cut out. Walker uses Hoosier R6 tires every day. The R6 is essentially a race slick with just enough tread drawn on it by the factory to get a DOT stamp. This particular set is more than a year old and probably fit for retirement. It doesn't seem to slow down the car. Inside 277 is more race-car functional than restomod lounge that's so often the case in older Porsches. This is exactly the opposite of something like a Singer. No popular spring-gated upgraded shifter. The race seats and belts are well worn from hours of track time. They don't match: One's a Sparco, the





other a MOMO. The gauges are stock, the speedometer's broken. The MOMO steering wheel fits so perfectly it should have been standard equipment. The stock plastic shift knob for the 915 is so small by modern standards that it makes me smile on the first couple of shifts.

The '08 Sharkwerks GT2 is 37 years newer. The jump from 277 to Alex Ross' latest creation makes it seem like 137 years. It makes me appreciate how fast cars evolve. Even without driving them. Walker's 2.6L produces a satisfying if sometimes elusive 220 hp (my estimate). Ross' car is rated at 775 hp. Let's call it three and half times more. Evolution Motorsports (EVOMS) provided the creatively named EVT775 kit. Nearly everything external of the heads that flows intake air or exhaust gas has been replaced: turbos, intercoolers, throttle body, headers, catalytic convertors, all the way to the mufflers. The results border on brutal.

Sharkwerks went with a focused approach on the suspension. The rear suspensions of the GT2 and GT2 RS suffer from excessive deflection under power and cornering loads. RSS adjustable control arms with monoballs in place of rubber bushings have added a bit of NVH, but also a substantial amount of stability.

Most of the replacement parts shave a pound or two here or there; the Champion Motorsport wheels are probably the biggest win in the war on weight. The 19-inch rears are each 8 pounds lighter than stock, while the fronts are 5 pounds lighter. Ross uses Michelin Pilot Sport Cup tires, an aggressive road and track tire Porsche has been favoring on its fastest models.

TECH SPEC

'08 PORSCHE 911 GT2

LAYOUT

Rear-engine, RWD, two-seat, two-door coupe

ENGINE

3.6L, 775hp/770 lb-ft, twin-turbo flat-six, EVOMS 775 kit, Clubsport intercoolers, upgraded hose kit, 1.75-in. headers, boost recirculation valves, HED coil packs, 68mm turbochargers, software tuning, IPD 82mm plenum and 997 GT3 throttle body, turbo inlet, 4.0 RS pulley, Cargraphic 200-cell catalytic convertors, straight-through Sharkwerks exhaust, Sharkwerks GT1 coolant "fix"

TRANSMISSION

six-speed manual, GT2 RS lightweight flywheel, Stage 2 clutch kit, Guard GT Pro Chromalloy limited-slip differential

CURB WEIGHT

3,211 lb.

WHEELBASE

92.5 in.

LENGTH X WIDTH X HEIGHT

175.9 x 72.9 x 50.6 in.

SUSPENSION

MacPherson strut (f), multilink (r), RSS/Sharkwerks rear-adjustable links, bumpsteer, and toe steer kit, monoballs and adjustable thrust-arm bushings

WHEELS & TIRES

Champion Motorsports RS184 wheels 19x9 (f), 19x12 (r); Michelin Pilot Sport Cup tires 235/35 (f), 325/30 (r)



The aesthetics are where Walker fits into the equation. Ross started with an all-white car. It looked like it just rolled out of Porsche Motorsports, waiting for race livery. Walker drew inspiration from a few different Porsche racers, including the recent 911 GT3 R Hybrid. The Union Jacks on the wing's endplates were not inspired by anything Porsche. Both Walker and Ross are recovering right-hand drivers who have taken up residence in the colonies.

I jumped headfirst into the deep end, taking the GT2 on a technical canyon road east of Los Angeles. In recent years, the stock 997 GT2 RS is one of the few cars to have scared me. I (along with our testing director and just about anyone else who got behind the wheel) had great, big, smoky spins while testing at El Toro airfield. After testing, I actually contacted Ross to see if he wanted to start a project GT2 RS-dualie. Our research indicated that one of the biggest problems was simply a lack of rubber at the rear. Naturally, the stability control stayed on for the entire day in the canyon.

Torque delivery is far more linear and predictable than stock. The factory car is tuned to deliver a big wallop of torque that smacks you in the kidneys all at once. Great fun when trying to impress friends, not as amusing when trying to exit corners quickly. The EVOMS kit doles out torque in a more predictable fashion, although a fast foot still coaxes far more than the rear tires can handle at any speed we experienced.

Even before driving the flyweight 277 for comparison, the GT2 has a heaviness to it. Maybe it's all the stout hardware, maybe it's all the grip. After a few miles acclimating to the power delivery, I'm able to link corners together. Normally in a car like this, all my attention is focused on keeping the power in check. This car has an area between 3,000 and 4,500 rpm where it behaves like a normal 911 and not a missile. When a longer straight appears, rolling into the throttle a little more brings acceleration very few humans will ever experience in their lives.



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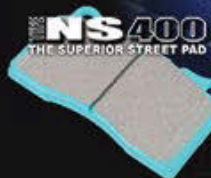


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- Outstanding initial stopping power
- Outstanding initial stopping power
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TECH SPEC

'71 PORSCHE 911 T "277"

LAYOUT

Rear-engine, RWD, two-seat, two-door coupe

ENGINE

2.6L, 220 hp/180 lb-ft(est.), flat-six, 2.0L, aluminum case, 66mm crank, 92mm pistons, twin-plug distributor, Mod S cams, 42mm Weber carburetors, 1.5-in. headers, M&K sport muffler, solid engine and transmission mounts

TRANSMISSION

Five-speed manual; modified (shorter) second, third, fourth gears; GT limited-slip differential

CURB WEIGHT

2,241 lb.

WHEELBASE

89.3 in.

LENGTH X WIDTH X HEIGHT

163.3 x 63.5 x 52.0 in.

SUSPENSION

MacPherson strut (f), trailing arm (r), 23mm/31mm Sway-A-Way torsion bars, 19mm Weltmeister antiroll bars, adjustable spring plates, front camber brace, modified spindles, Bilstein Sport shocks, polybronze bushings

WHEELS & TIRES

Fifteen52 Urban Outlaw wheels 15x7 (f), 15x8 (r); Hoosier R6 225/45 (f), 225/50 (r)



The brakes are the original PCCB units from the factory, but any sort of improvement would likely require a larger tire or more downforce to really see any advantage. I also doubt an upgraded system would provide greater stopping power without hurting daily usability.

The 997 was the last 911 to have hydraulically assisted steering. Some say the electric rack has ruined the car. The furthest I would go is that the EPS has changed it. Still, this car has the frenetic steering drivers associate with 911s. It kicks back at the slightest provocation. It translates painted lane markings into tactile feedback. More interestingly, when all that horsepower hooks up, the front end becomes noticeably lighter.

Falling into the race seat of 277, I wondered if driving it second was a mistake. Would it feel like an under-powered relic? The entire car buzzes with the engine. Literally spine-tingling, sometimes spine-shaking. The unassisted steering requires some muscle, but screams through your hands. It smells like

an old Porsche: oil, gas, and other things probably long since banned by the EPA.


It snakes through the canyons. It requires a lot of steering, both the amount dialed in and the attention paid. It's nearly impossible to hold a constant line without mid-corner correction. It flows with the landscape, following the camber. The shifter throws remind me of Venice, specifically gondoliers pushing boats through the canals. Even 15 minutes in, I come up short reaching for odd-numbered gears. The pedals are perfect, floor-mounted, nicely spaced. The human ankle and foot are hinged near the floor, clearly designed for a 911. The power can't be thought about in the same plane of reality as the GT2, but is easily as satisfying. It gains and loses as the road rises and falls, a level of Zen not found in modern cars.

That evening after driving both, I didn't know which was my favorite. The following day at the track would give me more information. It was decided that not much would be gained from acceleration

testing on these two cars. Hard starts are tough on drivetrains, and the outcome should be pretty obvious. So we did figure-8 testing.

Again, I spun a GT2. This time, however, it was me getting all cocky and not the car biting me. The two cornering sections of the figure-8 are constant radius turns, so keeping constant power is tricky. You have to time delivery with the exit. Get it right and you see 85 mph before laying into the brakes for the following turn. The braking is also brutal, peaking at 1.3 g.

The other end of the spectrum is where 277 lives. At the end of the straights, it pulls a respectable 71 mph but still peaks at 1 g in braking. The amazing thing is how similar both cars are in lateral force. The GT2 averages 1.1 g around the skidpad sections, while 277 averages 1.06 g. The big power difference means the GT2 laps the figure-8 in 22.8 seconds, making it the second-fastest Porsche we've ever tested, behind only the 918. 277 turns in a respectable 24.5-second lap, faster than a new Cayman. It could have been faster with newer tires, but wouldn't have been as much fun. It grips, but it's alive—it moves, it responds. This is what a driver's car feels like.

I think I favor 277 a little more. The Sharkwerks GT2 is a monster of a machine that works well as a daily driver, a canyon runner, and a track-day weapon. It's shocking how easy it would be to drive week in, week out. 277 would be tougher to live with on a daily basis. I wonder how Walker does it. He owns a fleet of Porsches, but 277 is his go-to. So I ask: "Is this what you use every day? Is this how you get to work and back?" His reply comes with a wry smile: "No mate, I walk. It keeps my carbon footprint low." 

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BEEP

SIX

CRUISING
CALIFORNIA
IN THE BRABUS
G63 6X6

WORDS & PHOTOS IAN KUAH



Ferraris, Lamborghinis, and Porsches are a dime a dozen in Beverly Hills and Dubai. Pull up to a posh restaurant or nightclub in one of these commonplace so-called exotics and you will barely rate a passing glance from the desensitized masses. However, one vehicle whose cachet and physical presence draw attention like an alien first contact event is the Brabus G63 700 6x6. As we cruised it along the streets of Newport Beach and Highway One, the locals (who are pretty nonchalant about expensive sports cars in their 'hood) visibly took notice.

Kids tugged at their parents' arms, pointing at us excitedly. Teenagers nearly fell off their skateboards. And we could see the odd elderly person mouth the words "What the ..." at the sight of our square-rigged six-wheel monster truck. The Brabus G63 6x6 has that effect on people, which in itself can be an endless source of amusement for its occupants.

The counterpoint is the fact that the "Big G"—as we affectionately nicknamed this Mercedes G-Class on steroids, since it's big enough to make a Hummer H2 seem normal—is actually a useful vehicle. It's great for dune bashing, or even something as mundane as collecting firewood while using its pickup capabilities. If you

live in West Hollywood (as the owner of this first Brabus G63 6x6 to be registered in the United States does), neither is going to be a likely activity. Instead, this car is a statement of individuality. And a damn fine one at that.

A stock G63 AMG 6x6 is the largest, most extreme, and most expensive Mercedes SUV ever. Its sheer size, uniqueness, and princely price endow it with a large helping of gravitas from the outset, and a 5.5L biturbo V-8 supports it with a strapping 544 hp and 560 lb-ft of torque.

While this is a potent engine in an E-Class or even an S-Class, the all-important power-to-weight ratio goes rapidly south when considering the humongous 8,325-pound curb weight. So even though the stopwatch says this street-legal monster truck will hit 62 mph in a rapid 6 seconds flat on the way to an electronically limited 100-mph top speed, the owner decided to improve that ratio.

Ratcheting things up to the next level meant discussions with Brabus USA in Irvine, California, where the plan was set to include an haute couture interior makeover along with the extra muscle. As Brabus USA's chief, Peter Moeller, explained: "The owner is an existing VIP

client of ours who always aims for the top and likes to put his personal stamp on his cars. The idea of having the first 6x6 G-model in the States and then making it even more powerful and more individual is typical of his approach." As major conversions like this are all done at Brabus headquarters in Germany, it made sense to divert this American-spec car to Bottrop as soon as it was built, perform the upgrades, and then ship it on to its final destination.

Before the M157 biturbo V-8 debuted in AMG vehicles, it was fiendishly difficult for Brabus to get mountain-moving levels of power and torque without resorting to the expensive and complex art of cramming in a modified V-12 biturbo. If this were successful, then a car would be good for 800 hp, with torque electronically limited to 811 lb-ft to prevent the drivetrain being reduced to scrap metal. The older-style gearbox and axles of the venerable G-wagon have a much lower pain threshold than newer models in the Mercedes range, so 700 hp and 663 lb-ft are the practical limits. Now the V-12's days are numbered unless you really must have that dozen-cylinder head count under the hood for reasons of pure, unadulterated hubris.



The new reality is that Brabus, masters of increased displacement, can re-engineer the AMG motor for life as a 6.0L powerhouse. Along with a slew of other modifications, the astonishing outcome is 50 more horses than that mighty blown V-12, with just as much twisting force. This win-win situation results in 850 hp at 5,400 rpm and an astonishing 1,069 lb-ft of torque between 2,500 and 4,500 rpm, that then has to be electronically scaled back to 848 lb-ft for safety. The second plus point of the V-8 is that there is little weight increase to go with this conversion, so handling balance is unaffected, unlike with the V-12 transplant, which makes the vehicle nose-heavy.

The M157 AMG motor displaces 5,461 cc from a bore times stroke of 98 by 90.5 mm. If a car requires the full-fat 850hp B63S 850 conversion, then Brabus goes down the 6.0L route. However, as the G63's drivetrain power and torque limitations are its Achilles' heel, the much more expensive displacement bump is unnecessary. The simpler B63S 700 conversion involves internally machining the housings of the turbocharger units to take larger compressor wheels. Each turbo is then mounted to a bespoke exhaust manifold with larger diameter pipes made as close to equal length as possible within the confined space of the engine bay.





To help absorb and dissipate the inevitable extra heat, an additional water-cooled intercooler matrix is installed, and gold heat-reflective material shrouds the air intake pipes and turbocharger boost tubing. At 3 inches (75 mm) in diameter, the downpipes are larger than stock and each cylinder bank sends its gases to the rear through a 3-inch pipe, via middle silencers, eventually ejecting the spent gases from big, highly polished side pipes.

In the old days, Brabus would also have fitted camshafts with higher lift and longer duration to optimize output. Such trickery is now all done with the ECU's variable valve timing map. So what used to require new hardware has now become an exercise in software tweaking.

The fueling, ignition, and boost pressure maps are also recalibrated to make full use of the larger turbochargers and the lower backpressure of the bespoke exhaust system. This recalibration also allows the motor to run closer to detonation for more power. This is quite safe, as the factory knock sensors are finely tuned to retard the ignition well before the danger point, protecting the motor in case of poor fuel quality, especially in high ambient temperatures.

The Brabus 700 engine is homologated to the current EU6 and U.S. 50-state emissions regulations, requiring the latest sport catalytic converter technology. Here, Brabus worked with an OE supplier to obtain a 400-cell metal unit with double the reactive surface area, yet with no more backpressure than the 200-cell units used before. The new headline numbers are 700 hp, with 708 lb-ft of torque between 2,000 and 4,500 rpm. The revised 0-to-62-mph sprint of a spectacular 4.4 seconds makes this huge 6x6 fast enough to crush most high-performance

TECH SPEC

'15 BRABUS G63 700 6X6

BASE PRICE

If you have to ask...

VEHICLE LAYOUT

Front-engine, 6WD, four-pass, four-door, pickup

ENGINE

6.0L/700-hp @ 5,400rpm/708-lb-ft @ 2,000 rpm twin-turbo DOHC 32-valve V-8

TRANSMISSION

seven-speed auto

CURB WEIGHT

9,000 lb. (est.)

WHEELBASE

165.2 in.

LENGTH X WIDTH X HEIGHT

228.1 x 86.0 x 93.2 in.

0-60 MPH

4.4 s (mfr.)

machinery from the stoplights and severely dents the egos of their drivers in the process.

This does not mean an increase in top speed. That remains pegged at 100 mph, a limitation imposed by the optional Hutchinson 18-inch two-piece wheels with beadlocks and specialist all-terrain tires that can be deflated and inflated by the onboard air pumps. But that's just fine. The thought of hurriedly decelerating a large, heavy vehicle with a high center of gravity from really big speeds is definitely frightening.

So it is best to enjoy the view from Big G's commanding driving position at more modest speeds, while luxuriating in a cabin treated to lashings of that other Brabus specialty: soft leather trim. Here, the background color is black, with the seat center panels, door inserts, and central armrest trimmed in white with a pentagonal stitching pattern. The quilted pentagonal leather mats are the opposite color combo, fashioned from black leather with white piping.





Unusual, but not unexpected in this white car is the white "carbon-fiber" trim for the center console, passenger grab handle insert, and seat adjuster surrounds in the door panels. Finishing touches are the aluminum pedal set, door lock pins, and stainless steel kickplates with blue LED backlit Brabus logos.

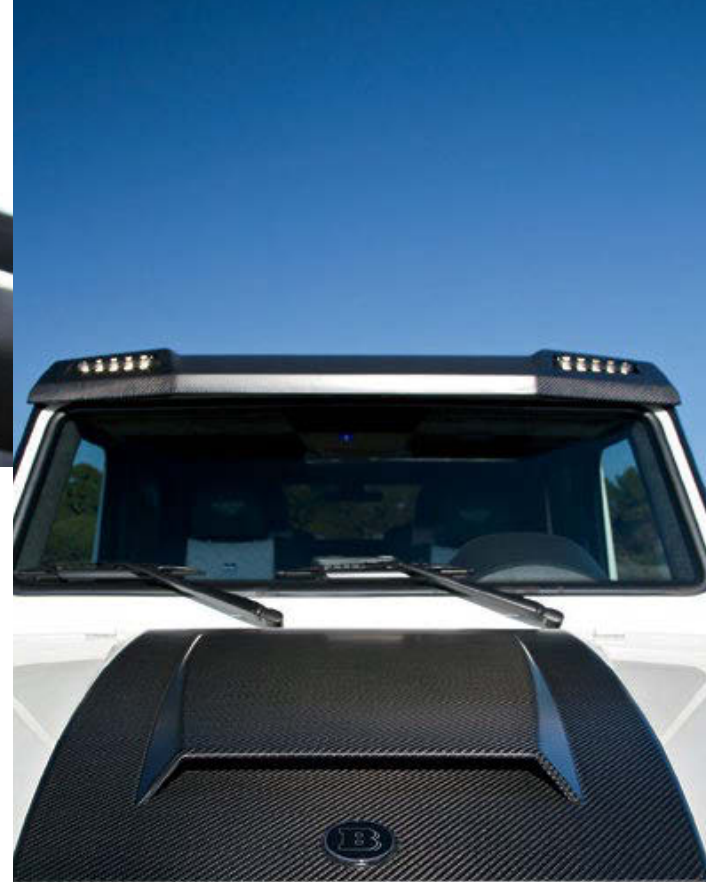
Embellishing the exterior white and black color scheme are the Brabus matte-finished visible carbon parts, which include the hood bulge with air scoop, front wing top mock vents, wing mirror covers, and roof extension parts with additional LED running lights. Additional Brabus body parts are the front bumper elements with LED running lights, upper front bumper section, double-B insert that replaces the Mercedes three-pointed star in the grille, and a polished version of the factory front under-ride guard. The Brabus running boards can retract and extend electronically.

The extra engine power is only felt when applying full throttle and using

the revs, but the tidal wave of enhanced torque is there all the time. As we observed before, the stock 6x6 is not exactly slow, despite its gargantuan weight. But with around 25 percent more torque on tap for any given engine speed, the Big G has a much more effortless feel.

What's experienced here is not waftability in the way the super-smooth and refined S-Class delivers it. Rather, there's a sense of sitting on a huge ocean liner leaving port under full steam, a slight shuddering from the G-wagon's pseudo-military drivetrain acting as a counterpoint to the cultured decorum of the plush interior.

All this is part of the G-wagon's unashamedly mechanical character that hails from a previous era. Call it an analogue machine in a digital age, but it seems to be something to which longtime owners of these vehicles are undoubtedly attracted. And after spending the day with this incredible Brabus G63 6x6, I get it, too. **EC**



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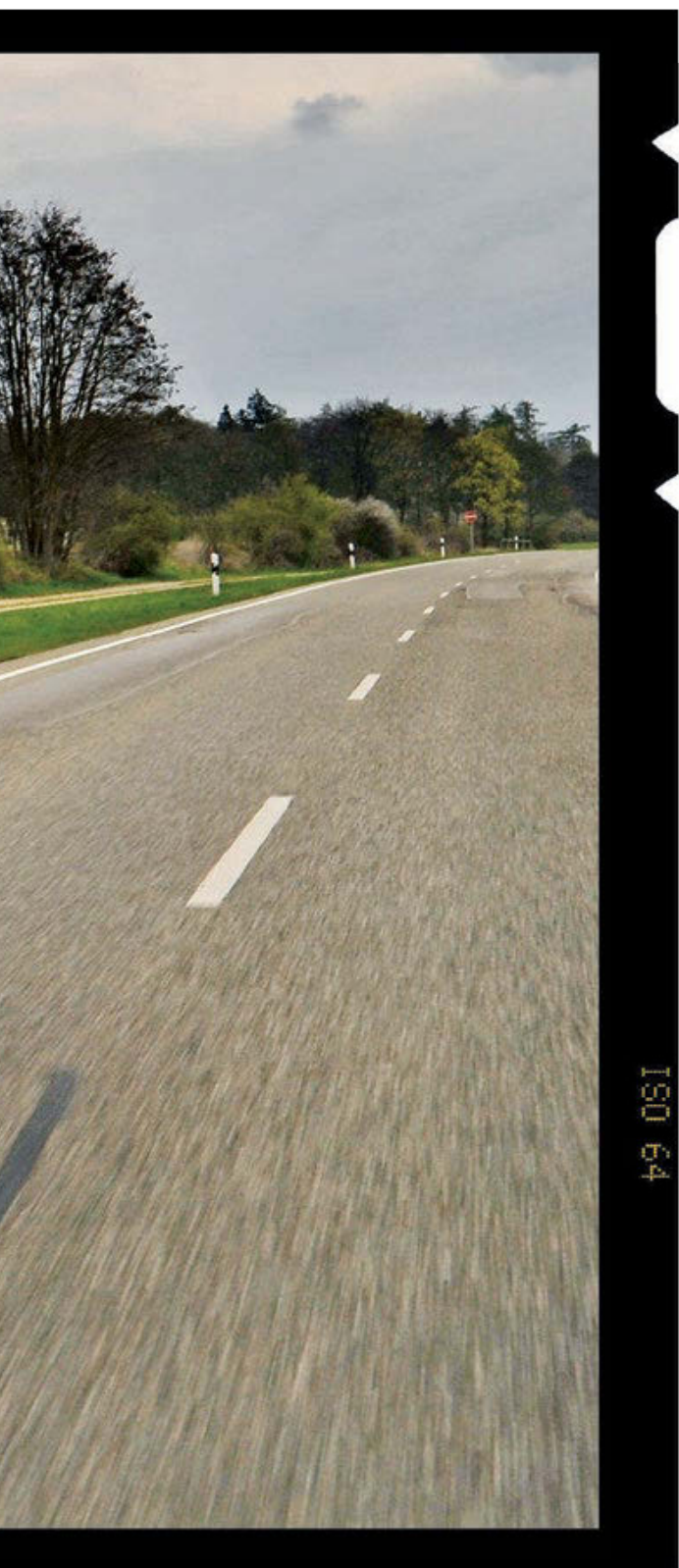
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150 64

GAME FACE

JUST WHEN YOU
THOUGHT VW TUNING
REACHED ITS LIMIT,
MTM BUILDS A
472HP MULTIVAN

WORDS MATT ZUCHOWSKI
PHOTOS KONRAD SKURA



A few raindrops falling on the derestricted A9 autobahn weren't the only things to spoil the good mood of a certain BMW M3 driver. While cruising at around 125 mph in the outside lane, a big VW bus appeared in his rearview mirror. Its left turn signal was flashing, claiming its right to overtake.

The M3 pilot's attempts to defend his badge's honor were futile—after a few miles of failing to get away, he finally surrendered, leaving me clear to finally floor the throttle of this 16-foot-long supervan. There was a good reason. The maker claims this seven-seater can do 174 mph, which had to be verified.

The man behind the van is Roland Mayer. As head of the legendary Motoren Technik Mayer (MTM) tuning house, probably no one in the world knows more about boosting Volkswagens and Audis. After he created the fabled inline-five 2.1L engine that propelled the revolutionary Sport Quattro to two World Rally Championship titles, Mayer decided to split from Audi to pursue his own vision, setting up his workshop just a stone's throw from Ingolstadt.

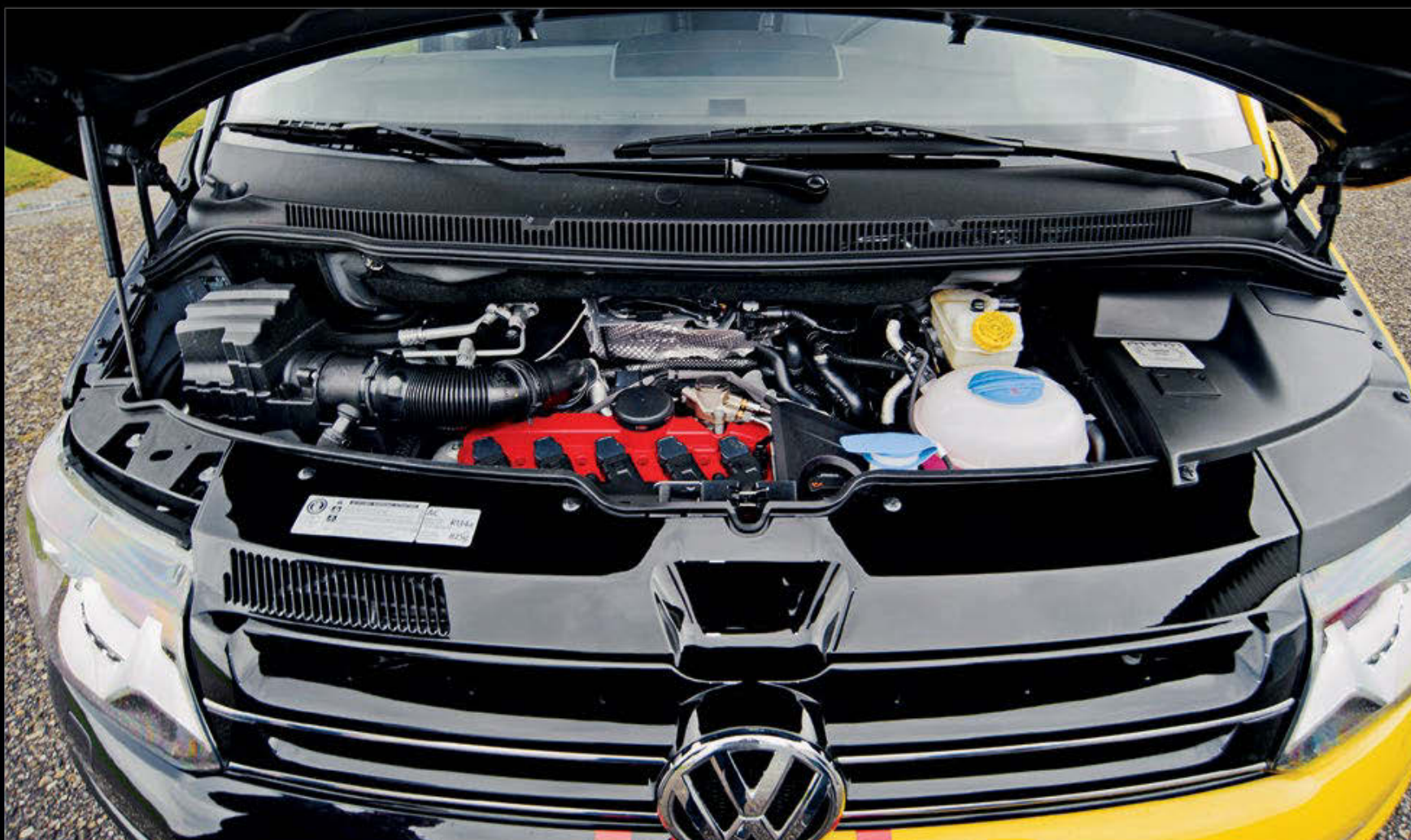
Many amusingly fast Audis, Volkswagens, Bentleys, and McLarens ensued. MTM's lineup now reaches 90 distributors around the world. Although a big part of the business consists of simple ECU tweaks or swaps to MTM wheels, Mayer still likes to work on madder projects. Remember his Audi TT Bimoto one-off with a pair of 510hp engines sitting at each end of the car? And it's mostly this man we should thank for creating the 700hp-plus mod so popular among RS6 Avant drivers. Bearing all this in mind, the most recent effort from MTM can be regarded not as insanity, but a logical addition to his burgeoning version of the Addams Family.

On his mission to make the fastest of the 10 million Transporters that left Volkswagen's factories, Mayer had to

find an engine potent enough for the job. Once again, he chose his favored inline-five arrangement, this time the 2.5 TFSI that powers the Audi TT RS and RS 3. Playing the usual set of ECU, turbo, and exhaust tricks, MTM turned it up to 472 hp, achieved at 6,900 rpm and 457 lb-ft of torque at 4,100 rpm. That's more than twice the power and nearly twice the maximum torque of the fastest of the stock Multivans available. Along with this hike came some precautionary measures like more effective Brembo brakes with 16-inch discs, stiffer KW Street Comfort coilovers, and stickier 275/35 Michelin SuperSport tires stretched over 20-inch MTM Bimoto rims.

For a car with such significant modifications, the van now known as MTM T500 stays surprisingly relaxed under normal load. The stock seven-speed dual-clutch DSG transmission and Haldex-based 4Motion all-wheel-drive system remain unmolested, so this Bulli on steroids sets off without drama and can be handled with hardly any effort. Only after the driver pushes the right pedal to the metal does he get to know the sports car lurking beneath.

The speedo needle zips past 120 mph with surprising ease—and way too often. The T500 accelerates to 62 mph in 5.6 seconds and shows even more impressive performance at greater speeds. It's not far off being a bigger version of the Audi RS 6. MTM's van never lacks traction and builds up speed relentlessly through the auto-shifted gears to hit some serious numbers. On the autobahn, that distinct five-cylinder noise is hardly perceptible because of the huge masses of air colliding with the upright front end. This direct-injected unit is working hard trying to make a 2.8-ton refrigerator go head to head with sleek coupes. The only thing resonating is the hooligan MTM exhaust throughout the whole length of the vehicle.



150 64



It's a funny sensation to be sitting high above other road users, feeling like a truck driver, but the van always feels well planted. The suspension limits body roll. It's stiff, but not to a point where it's uncomfortable. The steering remains light, in typical VW Transporter fashion, but doesn't lack precision. So there's pleasure to be had in driving the T500 on an empty twisting road.

The rest appears to be ordinary T5 Multivan, which is a good thing. Ergonomics are spot on, the fit and finish of the cabin are perfect, and there's a lot of interior space. It accommodates seven people comfortably and pampers them with conveniences like heated and turning seats, folding tables, cruise control, and air conditioning.

Mayer built this van and painted it the colors of the German flag to go with his friends to international football (soccer) matches. For those in constant need to travel at 130 mph with six friends and with \$200,000 to spend for the purpose, it's a perfect choice. The only one, really. It's a properly fast vehicle that never tires, munching miles at a scary pace.

After we pass the grim M3 driver, the speed still rises. The speedo shows 140, 150, 153, 155 mph. My passenger in the third row asks if we really have to do this. But then I have to slow down again because of some unsuspecting traffic blocking the left lane. Eventually, we weren't able to reach the promised top speed, but Mayer proved his point: it's the fastest people carrier money can buy. [EC](#)

TECH SPEC

MTM T500

BASE PRICE

\$200,000 (est.)

VEHICLE LAYOUT

Front-engine, AWD, seven-pass, Van

ENGINE

2.5L/472hp @ 6,900-rpm/457-lb-ft @ 4,100-rpm turbo DOHC 20-valve I5

TRANSMISSION

seven-speed DSG

WHEELS & TIRES

20x10-in. MTM BIMOTO, 275/35-20 Michelin Pilot Super Sport

SUSPENSION

KW Street Comfort rebound adjustable coilovers

CURB WEIGHT

5,600 lb. (est.)

0-62 MPH

5.6s (mfr.)



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Staggered
fitment
Accepts
OEM BMW cap



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17, 18"
Gloss Black Machined

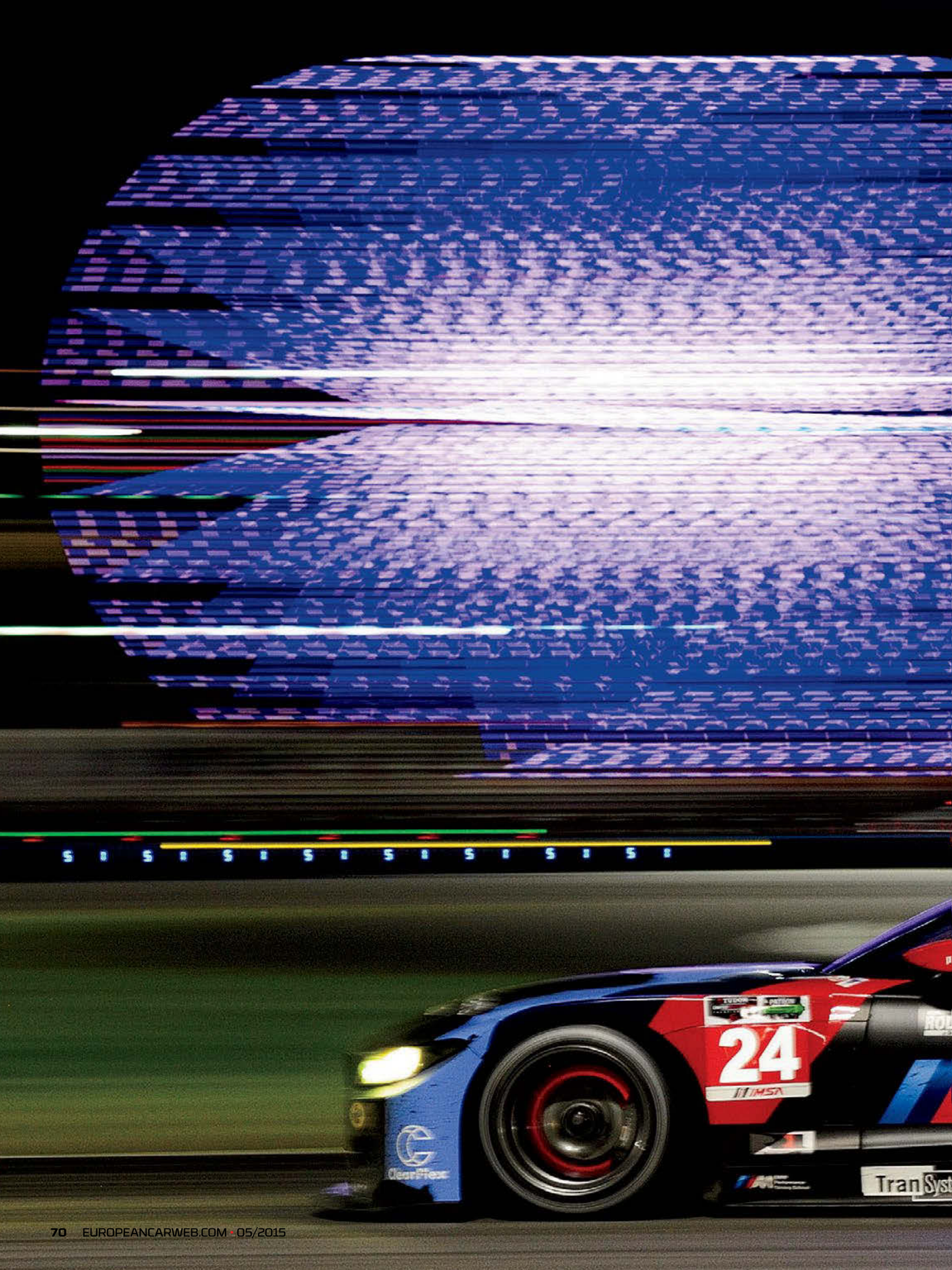
Staggered fitment
Accepts OEM BMW cap



Danza
18, 20, 21"
Silver Machined Undercut

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DAYTONA NIGHTS

THE BALLAD OF BOBBY RAHAL AND
BMW TEAM RLL AT THE ROLEX 24

WORDS RYAN JURNECKA





January 2015 and time for the Rolex

24 at Daytona International Speedway. Now in its 53rd running, the Rolex 24 opens the North American professional racing season. It's also the start of season two of the Tudor United Sports Car Championship and a year when people on both sides of the track are expecting the International Motor Sports Association (IMSA) to deliver close, fair racing among all classes.

BMW and Team RLL (Bobby Rahal, David Letterman, and Mike Lanigan) are entering the seventh season of competition since their partnership began in the 2009 American Le Mans Series. Originally running the E92 M3 GT2, they took two titles in 2010 (team, manufacturer) and all titles (driver, team, manufacturer) in 2011. The team moved to the Z4 GTE in 2013, with stiff competition from Corvette, Porsche, Ferrari, and (later) Dodge's Viper. Despite a one-two finish in Long Beach in only their second race with the Z4, BMW Team RLL only managed one more win that season and has yet to win since—although they have scored multiple podiums. Last year in Daytona, they finished second and fourth in class, with the second-place car finishing only 2.5 seconds behind Porsche's North American works team. This year, they're aiming for the top step.

To be more competitive, the team has brought two brand-new Z4s, presumably in the final year the model will be raced. "It's an expensive option, but as mileage builds on a race car, it tends to loosen up—regardless of its full rollcage—creating an inconsistent setup," says Thomas Plucinsky of BMW North America. "When you're talking about one tenth, or even hundredths of a second, that can make all the difference."

Changes were also made to the body this year. Jens Marquardt, director of BMW Motorsport, says: "I promised the guys in the U.S. that we were really going to work hard over the winter and try to make the package quicker. Today, we are a little closer and certainly not being eaten alive on the top straights like we were last year."



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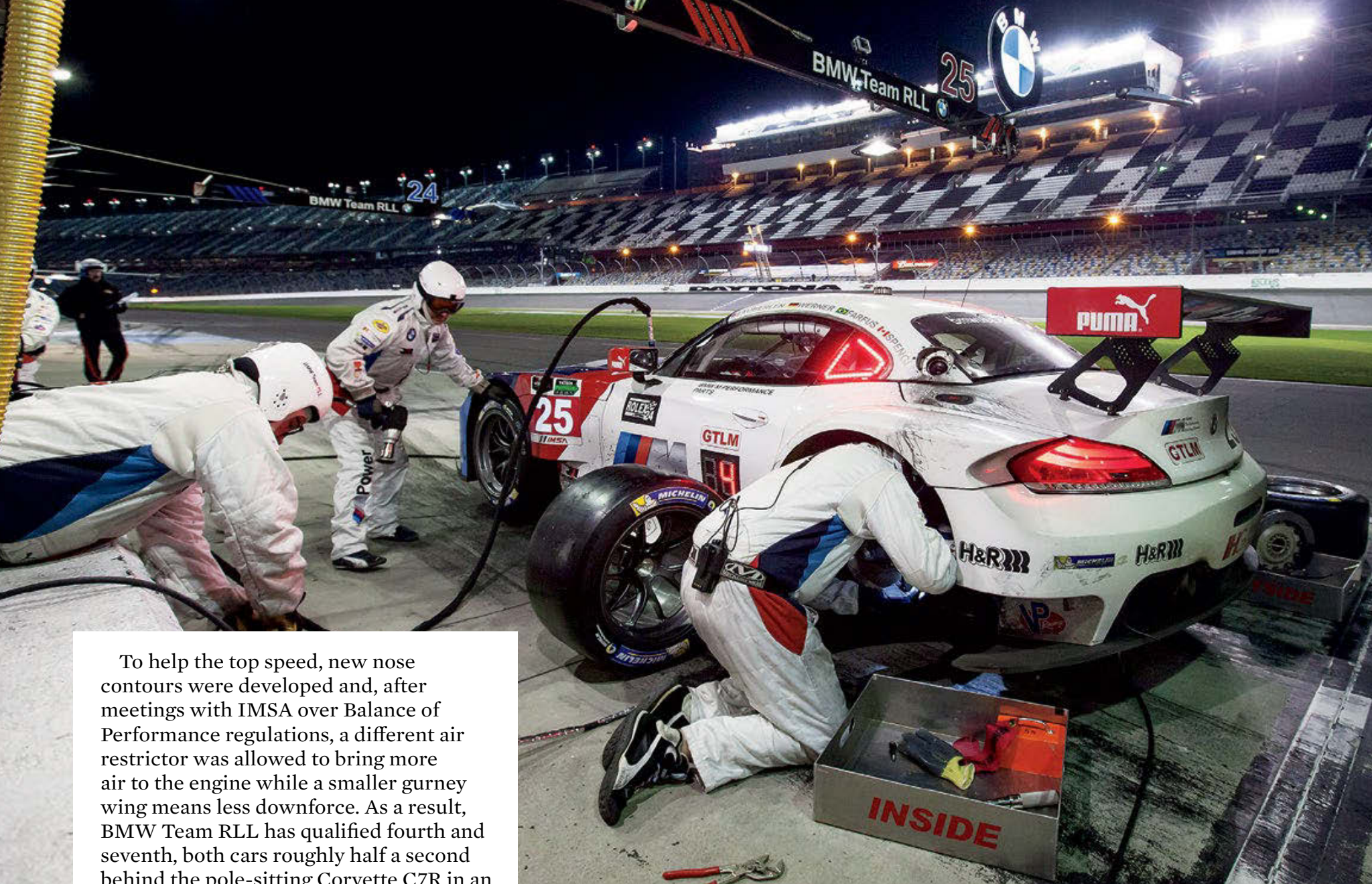
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beyond the M-series.



To help the top speed, new nose contours were developed and, after meetings with IMSA over Balance of Performance regulations, a different air restrictor was allowed to bring more air to the engine while a smaller gurney wing means less downforce. As a result, BMW Team RLL has qualified fourth and seventh, both cars roughly half a second behind the pole-sitting Corvette C7R in an incredibly tight field. Bill Auberlen, who put the number 25 car in seventh, says: "Where you qualify here doesn't matter. Give it a couple of hours, let everyone start to weed themselves out, and we will claw our way to the front."

Saturday, the day of the start. Teams across classes are already in their garages at eight in the morning, making final preparations. Race fans are preparing themselves, too, engaging in their first Bud Lights at the infield's Budweiser Bistro. It's pouring with rain, and Ferrari Challenge competitors are having a hard time staying off the grass in their 458s, creating an exciting appetizer for the early-bird audience. There's a notable late arrival for many spectators, though, as the main attraction doesn't start until 2:10 in the afternoon. The rain is enjoyed while it lasts; there is no forecast of wet weather for any of the 24-hour race.

At 11:30, only a thin cloud blows across the blue sky and the track is drying rapidly. BMW Team RLL rolls out their cars. Crowds move in as close as possible, pulling out their iPhones, pointing to any exposed components. Technicians resort to yells of "Out of the way." This encourages one gray-bearded man wearing a Corvette-logged jacket and hat to utter, "Oh, it's only a Bee-Em-Dubya" in a thick Southern accent, prompting chuckles from the team.



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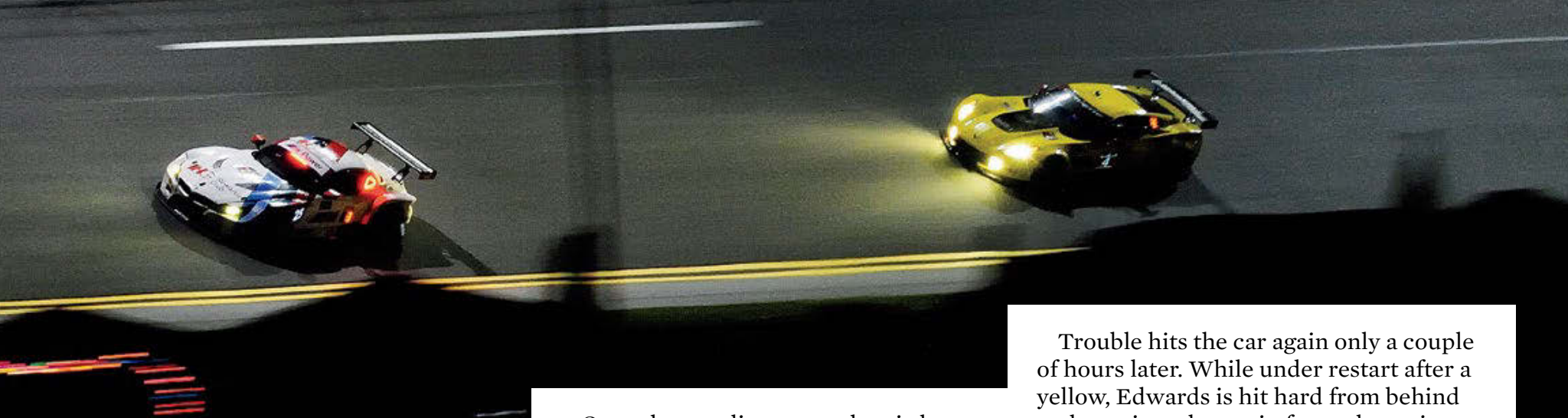
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"It's a chaotic scene as mechanics climb over and under the car to assess and fix it, watched closely by fans."

Once the cars line up on the pit-lane starting grid, fans jostle to get a better look. They are allowed to walk around the start/finish section of 18-degree banking and pick up any of the available Sharpie pens donated by Daytona to write a personal message on the all-important line. The grass bearing the Daytona logo has become mud from the earlier rains, leaving it pockmarked as thousands of feet made their way across. But the track is now bone dry.

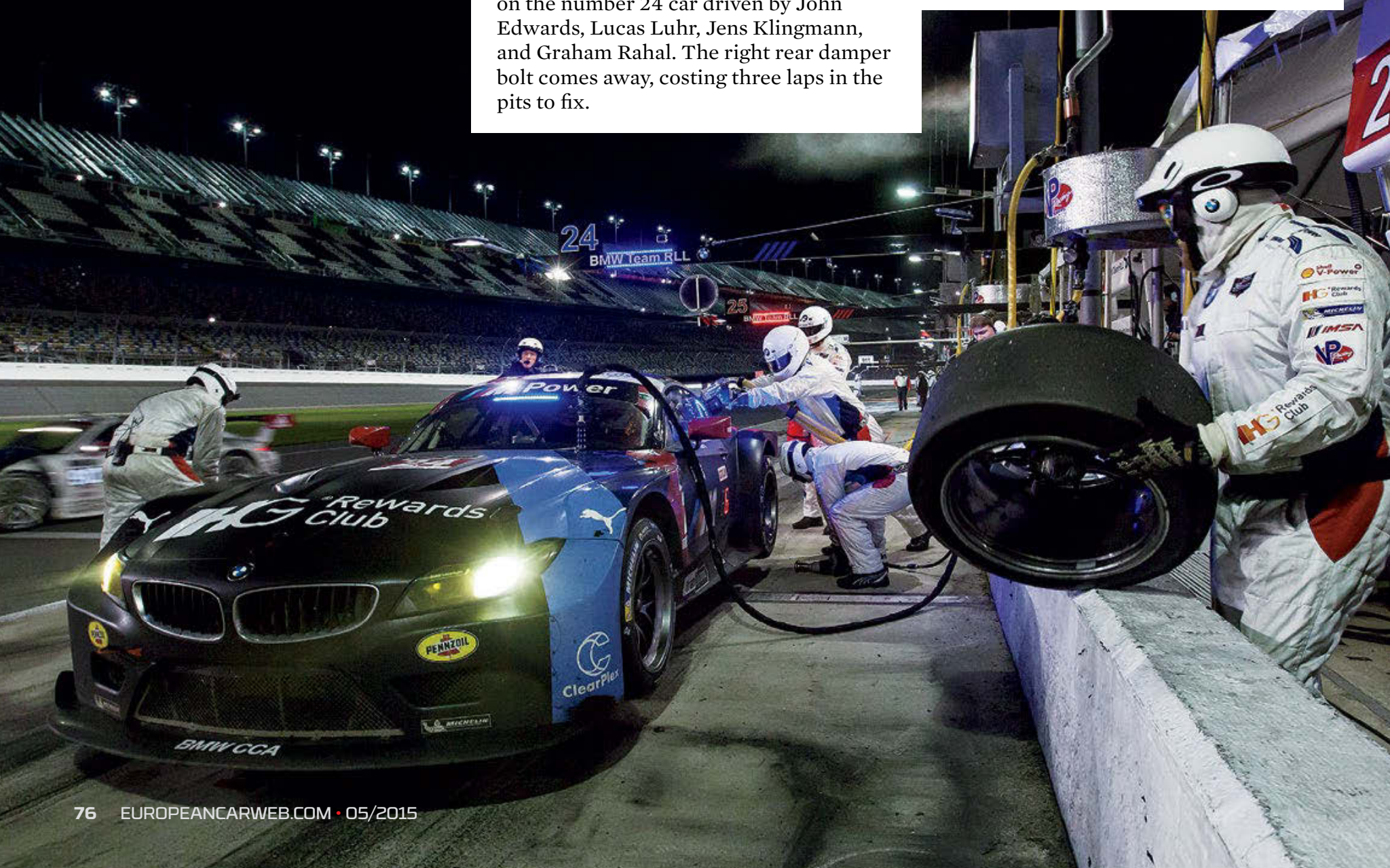
At 2 p.m., everyone is in position. Bobby Rahal stands in his white team jacket looking out at the track. Resorting to reading glasses while looking at the screens, he evokes a brief image of Indycar Bobby, the champion racer who looked like an accountant.

The team makes a decent start and remains competitive throughout the first quarter of the race, shuffling anywhere from second to eighth as cars drop out, pit, or encounter mechanical issues. After eight hours, the only problem arises on the number 24 car driven by John Edwards, Lucas Luhr, Jens Klingmann, and Graham Rahal. The right rear damper bolt comes away, costing three laps in the pits to fix.

Trouble hits the car again only a couple of hours later. While under restart after a yellow, Edwards is hit hard from behind and sent into the car in front, damaging both ends. The crew rushes to the garages as Edwards pulls in. It's a chaotic scene as mechanics climb over and under the car to assess and fix it, watched closely by fans.

Some damage is easily fixed. The bent exhaust pipe is straightened with pliers. Changing out the front right brake rotor is only a 2-minute procedure. Rotors, calipers, and brake pads are all one unit pressed together, with only two bolts to screw in, and a pre-bled pressurized brake line is ready to connect. Broken steering racks are more difficult to remedy. Also, the rear bumper isn't attaching properly, despite all the whacking the mechanics are giving it.

At last, nearly 40 minutes later, the air jacks are let up and the car crashes back down to the concrete floor, cracking off the ill-fitting bumper in the process. "Screw it" seems to be the feeling and the car is released without the bumper. This has cost the team 29 laps.



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-Greg Emmerson (European Car Magazine)

"They've designed a simple plug-in harness, and a really clean display that reads all sorts of info, and it's in view of the driver and passenger while not cluttering the steering wheel or center console. Better yet, it's affordable in comparison to all those ancient analog gauges as just the desired boost, oil and water temperature and battery gauges would set you back over twice what the retail of P3 Car's VIDI gauge does at it's MSRP!"

-Barry Brazier (MC2 Mini Magazine)

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-MJ Calabrese (Roundel Magazine)

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Meanwhile, the number 25 sister car is doing well and challenging a Corvette C7R for the GTLM class lead. Driven by Bill Auberlen, Dirk Werner, Augusto Farfus, and Bruno Spengler, it finally captures top spot around four in the morning and keeps it for the next four hours. Shortly after eight, with Spengler behind the wheel, the brakes fail. There's some rear end damage, but nothing too serious. The car pits for a brake change and loses position before going back out minus its rear bumper, just like its sister.

Two hours to go and 25 is leading the class. But a subsequent mistake in the pits drops it back to second. With 17 minutes left, a yellow flag brings Werner closer to the Corvette for one last challenge.

"I can see him," says Werner, his strong German accent barely decipherable over the radio.

"Can you smell him?" Rahal says.

"Yes, I can."

"Smells good, doesn't it?"

"Sure does."

The Z4 and the Vette are the only two left on the leading lap of the GTLM class, with another Corvette a few laps behind in third. Number 24 is in fourth, having made up six laps, but still more than 20 laps adrift. It's a mad dash at the end, with an expanding and contracting gap keeping the two apart. Ultimately, it's not enough. BMW Team Rahal finish 0.478 seconds behind the class-winning Vette. It's a consecutive second and fourth GTLM finish at Daytona. "We're getting closer every year," Rahal says. "Maybe next time we'll get to the top of the podium."

Last year, after the same finish, the team went on to reach the podium at the 12 Hours of Sebring and led the championship after two rounds. The team is optimistic about that upcoming endurance race and has another historic incentive: It'll be the 40th anniversary of BMW Motorsport's first victory in North America at the same venue. **EC**





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03



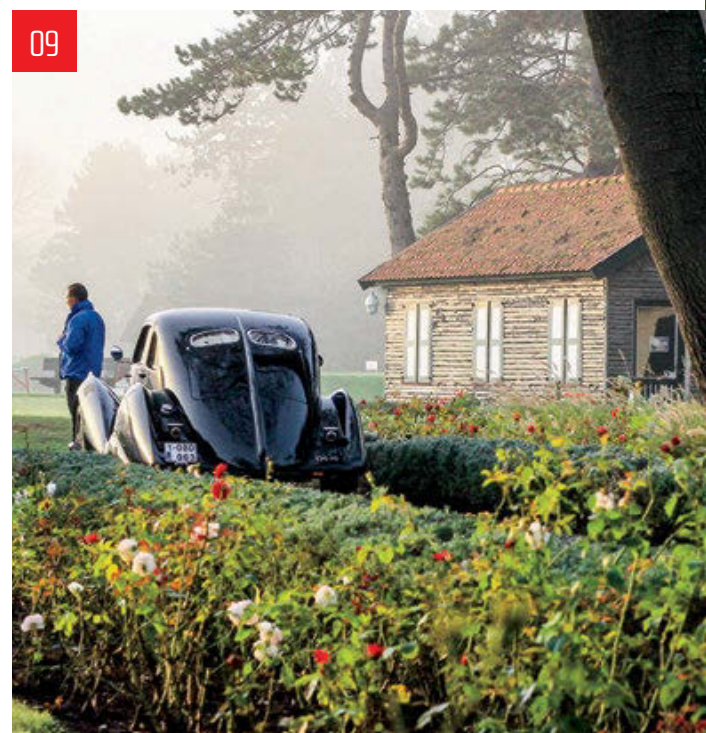
04



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08



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02

ZOUTE SWEET

SOME OF THE WORLD'S BEST VINTAGE CARS ARE HIDING IN BELGIUM

WORDS & PHOTOS EZEKIEL WHEELER

Belgium isn't necessarily a destination I'd been wishing to experience. Yes, the chocolate is out of this world and the beer appeals to hop-heads, but I never imagined a Ferrari 275 GTB caked in mud screaming along a country road. A great friend of mine, Dirk de Jager, has been insisting for years that I pay his home country a visit. "I promise you," Dirk said, "the Zoute Grand Prix is well worth the trip alone."

Dirk isn't just a normal friend. He's a well-respected and deeply passionate photographer of vintage cars. To sweeten the deal, he told me about us participating in the classic car rally that takes place a few days before the concourse event. So, on a rainy day in October, I arrived at the main train station in Brussels. Dirk was ready to show off his country. After a few

pit stops at some of the nation's best beer establishments, we arrived in Knokke Zoute (Ca-no-ké Zoot), a small coastal town roughly 30 minutes north of Bruges. It's a charming European beachfront getaway with luxury shops and cafés here and there.

The Zoute Grand Prix is a three-day event that hosts a two-day timed rally, a concourse, an exotic car rally, and a GT rally. Then there's the Bonham's auction that takes place as soon as the rally drivers cross Day One's finish line. What I didn't imagine was how the scrutineering area would look, let alone the check-in tent. First, a cherry Jaguar XJ120 pulls in for inspection, followed by a real Porsche 550 Spyder. Behind that, an Aston Martin DB4 Zagato Coupe. This simple countryside rally just got serious.



07

01. '29 Bentley Speed Six "Old Number One," overall winner of the 1930 Le Mans 24 Hours and the freshly restored '38 Mercedes-Benz 540K Streamliner.
02. Mercedes-Benz 300SL Roadster blasting through a flower field.
03. '50 Ermini 1100 Sport Berlinetta Motto. The '62" owner nuzzled into its bespoke chassis like a well-made Italian suit.
04. Porsche 356 Cabriolet checking in to the Zoute GP Rally.
05. '60 Ferrari 250 GT "Passo Corto" Berlinetta Scaglietti, chassis '93 GT1953.
06. '50 Maserati A6 CGS taking on the farm roads of Belgium.
07. Ferrari 166 MM Barchetta Oblin, chassis 0300M. This is a rare Belgian coachwork vehicle that isn't known amongst many Ferrari heads.
08. The Ferrari 250GT SWB deserves a close-up.
09. '36 Delage D6-70 Figoni Le Mans sports a unique body by the famed coachwork duo, Figoni et Falaschi. Figoni was 14 when he took an apprenticeship at a carriage builder's studio, then fought in WWI soon after.
10. Derek Bell taking an interview break from his 1930s 4.5L Bentley.



03



04



I noticed a few familiar faces pop up, including racing legend and all-round good guy Derek Bell. He rolled into the show in a '29 Bentley Speed Six "Old Number One," which also won the Le Mans 24 Hours in 1930, as if it was a completely normal thing to motor around Belgium in.

As my guide introduced me to local collectors, I began to realize that Belgium might just be the best country in the world when it comes to classic cars. And I've been fortunate to attend some memorable shows around the globe, like Pebble Beach Concours, Goodwood Revival, Amelia Island, and Rolex Historics. But the Zoute Grand Prix? This would never have crossed my mind if it weren't for my Belgian connection.

What Belgium does right is its homework. Talking with each of the owners about the car(s) they brought along, I felt as though I had just spoken with a crowd of automotive savants. Not one owner, media guest, or even spectator was clueless about the cars that gleamed in the rare sunlight in Knokke. For example:

- 01. '48 Cisitalia Abarth 204 A Spyder was the first car to wear Carlo Abarth's name and was the last Cisitalia to be made. It was found in Argentina racing in back-country rallies through the 1980s.
- 02. Best in Show winner, '58 Ferrari 250 GT Pinin Farina Cabriolet Series 1, chassis 0791 GT.
- 03. A Bentley 4.5L bellowing through the sun-soaked Belgium countryside.
- 04. More than 50,000 people from all over Belgium packed the city center to see the participants of the Concours drive across the winner's stage.
- 05. A BMW 503 Cabriolet showcasing its road grime from its Rally ventures.



"This Cisitalia was the last of its kind, but was the first race car to bare the logo and name of Carlo Abarth. That car over there is an Ermani, a recently revived Mille Miglia race car that hasn't been seen since the '50s."

Dirk began schooling me in a proper automotive history when his phone rang. "We have to go pick up a car. Are you ready for some fun?"

We hurried back to our hotel as a white trailer squeaked up. A frazzled albeit amiable man popped out. I later discovered he was the mechanic behind many of the vehicles on display at the show. Before I knew it, the ramp dropped, straps removed, and I found myself being educated on the start-up procedure of a '24 Vauxhall 90-4 in all its polished-alloy glory. The owner of this particular vehicle had a few entries in the concours and the rally and needed us to take this one off his hands for the weekend. A problem Dirk and I had no issues with. It turned out we also had the option of a Ferrari 250 SWB, but the mechanic decided to keep that one within arm's reach.

01

02

05



01

Early next morning, Dirk and I climbed into his Volvo wagon, ready to photograph the rally stage. We had the same route guide as the participants: rendezvous at the starting gate and set off ahead of them. Dirk was motoring a little faster than the field and we pulled into the first timed location just as it was about to be attacked by a field of rumbling Jaguar E-Types, Porsche 356s, and Austin Healeys. We hopped out just in the nick of time and snapped the first three cars to blaze past us.

"Come on, let's go," Dirk said. We jumped back in the car and I nervously read off the pace notes and determined we were roughly 2 kilometers away from another prime location. Once there, we caught another group of classic motors and pressed on. I soon realized this would be the pace for the next eight to ten hours.

The rural route for the day took us down remote one-way farm roads, through small villages, along streams, canals, and flower fields. Our day was graced with sunshine and zero rain, even though it had poured torrentially just days before and was slated to do so again shortly after the rally. I'd like to think I brought some Southern California good weather to enjoy the event more.

As the rally began to draw to a close, we made our way back to Knokke Zoute for the Bonham's auction. Into the night, engines roared and champagne glasses tinkled as the waves crashed onto the beach.



02

01. Bugattis could be seen from nearly all eras and in every event during the Zoute GP.

02. A VW Type 2 pickup hauling its original Porsche Formula car. No big deal.

03. '22 Bugatti Type 29/30 with eight-cylinder engine sporting 90 percent of its original bodywork and engine parts.

04. A '65 Jaguar XKE E-Type cutting through some trees.

05. An E-Type Coupe was a popular rally car choice amongst collectors.



03



04



05

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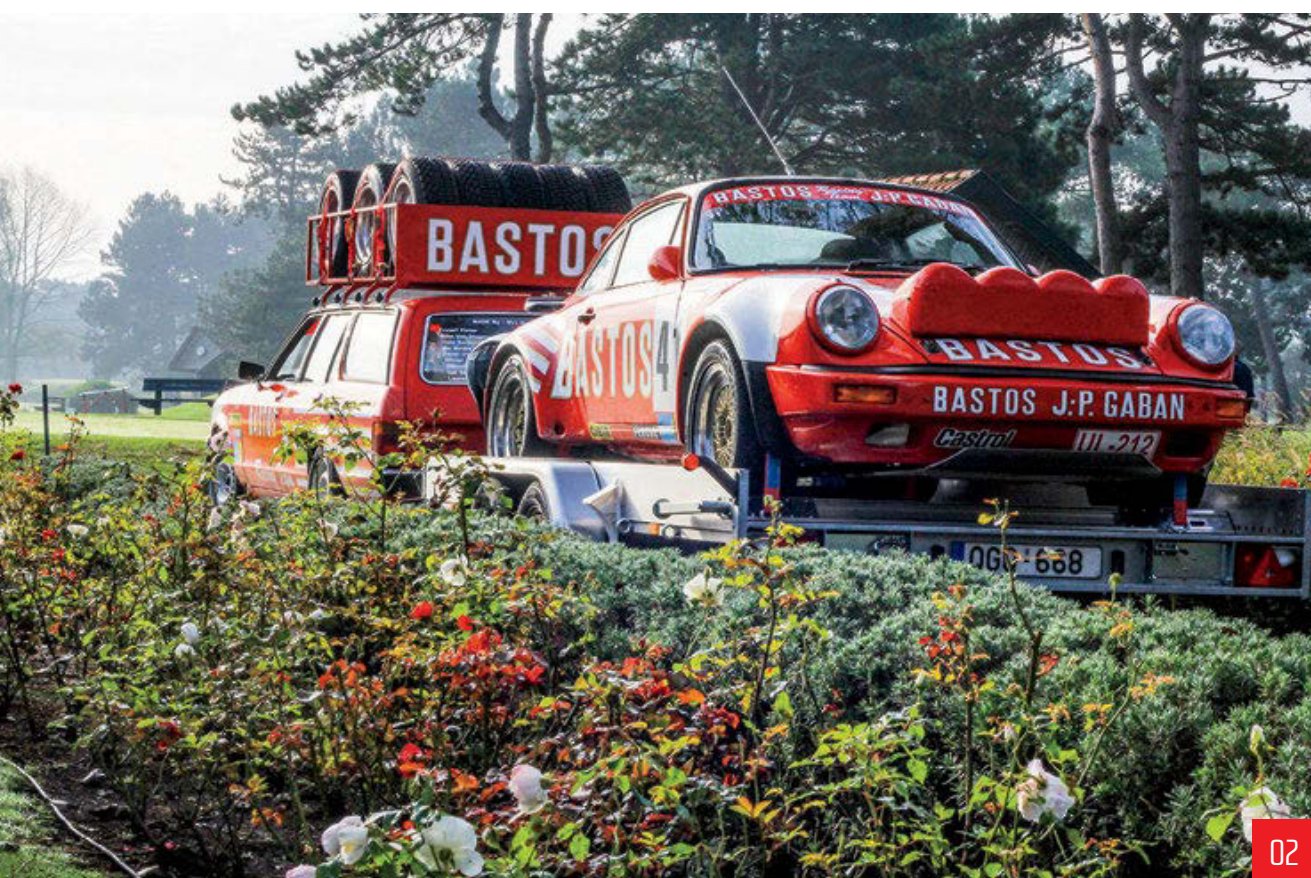
01

Another day greeted us, and this time the Vauxhall would be the star of the day. Blasting down empty Belgium coastal roads at six in the morning in a vehicle that sounds more like an historic warplane than a car is an experience worth adding to anyone's bucket list. As for the Zoute GP Concours itself... *tres bien*. A '58 Ferrari 250 GT Pininfarina Cabriolet Series 1 took top honors for the day, but the competition was stiff. Yes, the Zoute Grand Prix does have sub-categories, but for a young event (it's only been around for five years), don't expect to sit around waiting for an announcer to bring the winners up on stage.

The Zoute GP does it a little differently. The main stage is in the town center, where tens of thousands of people line the streets waiting to see the concours competitors. The winners for each category are announced during a private lunch. Once lunch is complete, owners return to their cars and await their police escort toward the main stage. The moment they leave the concours grounds, crowds of people line the route, snapping photos, begging drivers to rev their motors and give a celebratory wave. We were happy to oblige in our pre-war Vauxhall loaner.

The Zoute GP brings an element of motoring I nearly forgot about: a celebration of art and performance. Americans tend to forget that Europeans invented the automobile. They also started organizing races long before we did. Many of the pioneers and heroes we celebrate in the States are European, and the Zoute GP is an experience that rounds up the best elements of racing, driving, showcasing, appreciating, and celebrating the automobile with style. The Zoute Grand Prix is a show not to be missed.

Visit zoutegrandprix.be for 2016 dates, registration, and events calendar. **EC**



02



03

01. Seeing an Alfa Romeo 1900C SS Zagato is a rare sight, especially seeing one getting dirty in the rally.

02. An original Bastos Porsche SC Rally car complete with a replica Ford station wagon team support vehicle. Can't have one without the other.

03. Just a glamorous woman enjoying her '60 Ferrari 250 GT Pinin Farina Coupe Series II.

04. '58 Ferrari 250 GT Pinin Farina Cabriolet Series 1, chassis 0791 GT. Did we mention his son drove his other Ferrari in the rally? Yeah, that happened.



04

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INSORIC REAL-POWER DYNO SYSTEM

Words & Photos Doug Neilson

COULD THIS COMPACT AND AFFORDABLE
SETUP LEAVE DYNO-SAURS IN ITS WAKE?

“How much power does my engine really make?” Most of us have asked that question. If a car is brand new and/or unmodified, we have a fairly good idea (thanks to manufacturers’ specs), provided the car is in excellent condition. But if the car has high mileage or the engine has been modified even slightly, the picture becomes much less clear. The “old-fashioned way” of finding out was to take the car to a local tuning shop with a chassis dynamometer. This is all well and good (and interesting), but a lot of time and effort goes into the logistics, strapping down, and running the car on a two- or four-wheel chassis dyno.

At the beginning of a project car series, the smart thing is to do some dyno runs to get a baseline number, then make modifications with incremental runs along the way. This method is great for measuring power upgrades, but no precise standardized value is actually measured.



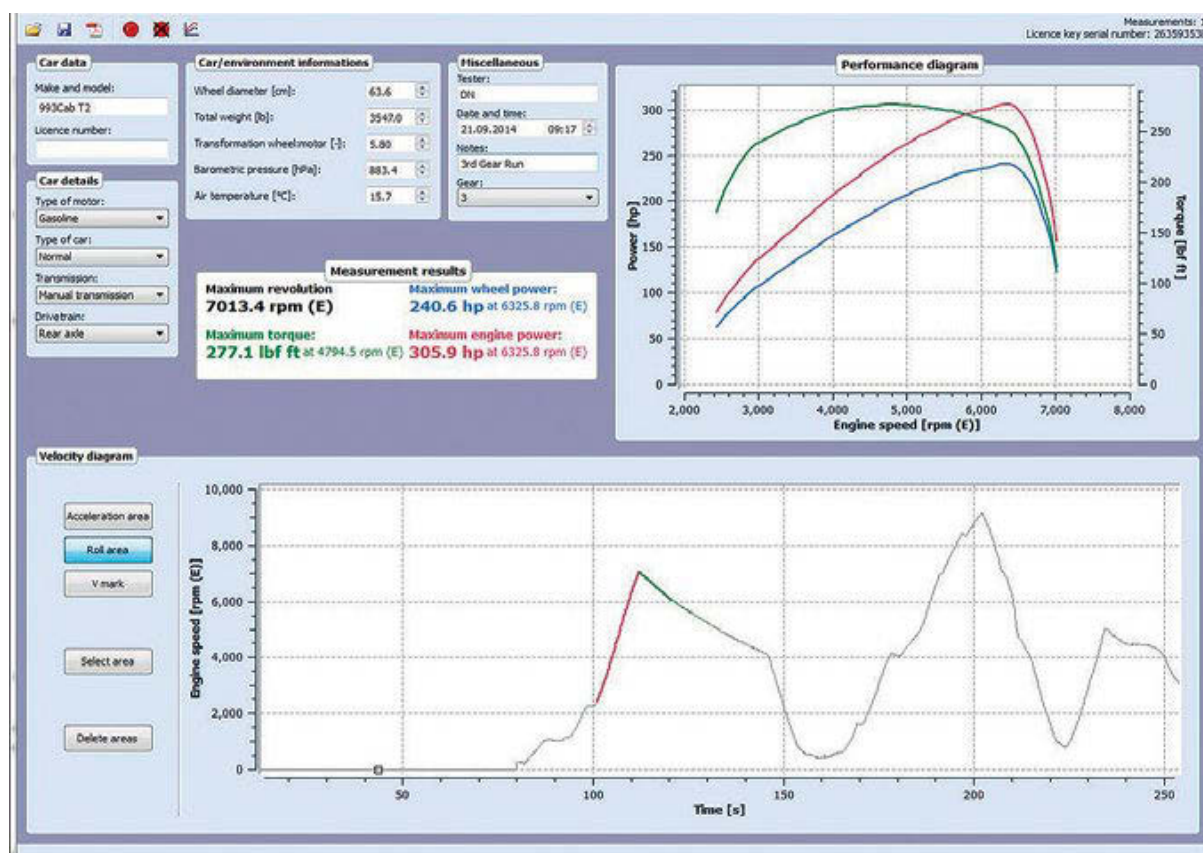


There are also issues with dyno runs when proper airflow is not provided, so we do not obtain a real-world picture. Results end up being inconsistent. Also, dyno results providing wheel horsepower (whp) is one thing, but calculating actual crank horsepower (bhp) is another. Many debates have occurred over what the drivetrain losses are for front-drive, rear-drive, or all-wheel-drive systems.

Fortunately, we no longer have to worry about such inconsistencies, thanks to Insoric. This Swiss company has come up with a highly technical and systematic method to enable the measurement of crank and wheel horsepower (and torque) for any car or truck in an easy, standardized, and repeatable manner.

The Insoric RealPower dyno system uses a miniature puck-like device attached with double-sided tape to one of the wheel hubs. It doesn't matter which one. This device collects angular velocity using a proprietary method and stores run data that can then be downloaded to a laptop via USB. Just turn the unit on and do a few runs (or pulls) on a flat, straight road from 2,000 rpm to redline (in Second, Third, or Fourth gear), dipping the clutch (or flipping to neutral on an automatic) after each run, and allowing the vehicle to coast or drag down 20 mph or so. This latter step enables a precise calculation of actual crank horsepower as the "drag" of the vehicle (test weight, drivetrain, aerodynamics, etc.) is effectively removed from the calculation.

Using the accompanying software, more information is put into the collected and loaded data file: the precise test weight of the vehicle, including current fuel load and all passengers along for the test run (preferably using race scales); gear ratios (from the manufacturer's specs); wheel or tire diameter; temperature and barometric pressure measured with tools provided by Insoric.



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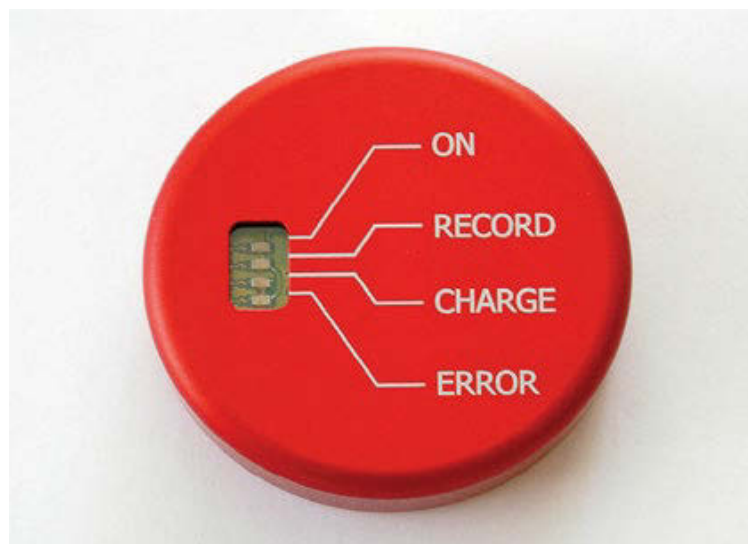


This information can then be analyzed for precise, standardized, and repeatable results. All the numbers are collected under real-world conditions. The vehicle is “at speed,” therefore the airflow to the intake, radiators, and intercoolers (if present) are all true to form. Typical dyno issues such as improper airflow, heat sink, dyno model, user variability, and other factors do not contaminate the data.

The accompanying software is also simple to use when inputting, analyzing, and displaying the acquired data. No special skills are required beyond a basic knowledge of Windows-based PC systems, which is necessary for downloading and saving files. For analysis, simply select the acceleration area (red line) and drag-down area (green line) in the Velocity Diagram display. Insoric’s software will then automatically calculate and display the measurement results on the screen (engine power, wheel power, and torque), and will also plot those results in a formal dyno sheet format, if required.

For a full-on test, we lined up 10 vehicles for testing on the same day, at the same location, and using the input data and test procedure listed earlier. We included late-model, low-mileage, “bone stock” cars (with known horsepower specs) and several modified cars. Also, we used the top-of-the-line Insoric RealPower Professional version. We decided to use Second gear for our runs to redline to keep the speeds down to a minimum, as suggested in the instruction manual and demonstrated in Insoric’s YouTube clip.

"The accompanying software is also simple to use when inputting, analyzing, and displaying the acquired data. No special skills are required beyond a basic knowledge of Windows-based PC systems."



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BONE STOCK CARS	MILEAGE	2ND GEAR INSORIC BHP	3RD GEAR INSORIC BHP	LIKELY INSORIC BHP	FACTORY BHP
'12 VW GOLF R	10,500	267	267	267	256
'14 PORSCHE 911 50TH ANNIV. ED.	1,500	352	////	428*	430
'14 LAMBORGHINI AVENTADOR	500	586	////	713*	683
'11 PORSCHE 911 GT3RS 4.0**	4,000	405	493	493	494
*SCALED - Data were calculated by multiplying the 2nd gear measurements by approximate scalars calculated from the four cars re-tested. Normally aspirated and super-charged cars, scalar = 1.217 and turbo-cars, scalar = 1.088.					
** Aftermarket wheels and exhaust tips should have no effect on this test.					

MODIFIED CARS	MODIFICATIONS	2ND GEAR INSORIC BHP	3RD GEAR INSORIC BHP	LIKELY INSORIC BHP
'98 PORSCHE 911 CABRIOLET	Fabspeed header back exhaust system, Rennsport/GIAC ECU tune, RS LFWF/clutch	248	306	306
'95 PORSCHE 911 CARRERA	4.0L pistons and cylinders, 997 GT3 crank, connecting rods, and exhaust with Cat delete, custom heads, cams, ITBs, tune and standalone ECU, RS LFWF/clutch	312	////	380*
'08 PORSCHE 911 GT2 #1	RS intercoolers, 200 Cell Cat GMC exhaust system, Sachs Sport clutch and pressure plate	540	588	588
'08 PORSCHE 911 GT2 #2	RS intercoolers, Fabspeed 200 cell sport cats and muffler bypass pipes, Sachs Sport clutch and pressure plate	540	////	588*
'11 CHEVROLET CORVETTE Z06	Haltech cold air intake, ZR1 exhaust system	490	////	596*
'06 FORD GT	Heffner supercharger pulley, Torrie ECU tune, Tubi exhaust, Accufab 2 butterfly throttle body	599	////	730*
*SCALED - Data were calculated by multiplying the 2nd gear measurements by approximate scalars calculated from the four cars re-tested. Normally aspirated and super-charged cars, scalar = 1.217 and turbo-cars, scalar = 1.088.				

We also used Second gear when pre-testing the system using a stock '12 VW Golf R and achieved perfect results. Crank horsepower was calculated to be 267 bhp (note that the '12 to '13 MkVI Golf R is officially rated at 256 bhp, but it is widely known that this number is underrated, and North America did in fact receive the "Euro" tune of 270 PS, or 267 bhp). However, many of the cars were not making the numbers we expected. In discussions with Insoric directly after the test, we found out that Third gear (and Fourth gear) provides more precise results for most cars, especially so for naturally aspirated models. The reasons for the lower values in Second gear (according to Insoric) are:


1. Power output during acceleration is often electronically throttled in the low gears of modern drivetrains (First and Second).

2. In low gears (First and Second), the engine consumes more energy for the rotating mass during short but dynamic acceleration, and this energy is not transferred to the wheels.

Insoric is currently working on algorithms to take this effect into account. Valid comparative measurements for incremental before/after testing can certainly be carried out in Second gear at lower speeds. The company has also indicated that it will be making changes to its instruction guide and video to rectify this minor issue.

Fortunately, we were able to round up four of our test cars at a later date and re-run them using Third gear with excellent results. Both the stock VW Golf R and Porsche GT3 RS 4.0 tested to perfection with calculated crank horsepower of 267 bhp and 493 bhp, respectively. The two

modded cars posted believable results, too, with the '98 Porsche 911 (993) Cabriolet pumping out a solid 306 bhp (stock is 282 bhp), and the Porsche (997) GT2 #1 a strong 588 bhp (stock is 530 bhp).

To simplify the contenders and results, we have arranged the data into two tables—"Stock" and "Modded"—and have included both the Second-gear and Third-gear runs for completeness. Note that the "scaled" data listed in the "Likely Insoric" column were estimated by multiplying the Second-gear measurements by approximate scalars calculated from the four cars re-tested. The Insoric RealPower dyno system provides precise, easy, and reliable information for tuners and enthusiasts alike. This product could become the industry standard for aftermarket power measurements. 



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'96-'04 Porsche Boxster 986

THAT MID-ENGINE MAGIC THOUGH

Words Colin Ryan

Most car guys won't buy a soft top. They will, quite reasonably, point out that the lack of metal roof means something is missing structurally, leading to body flex (aka scuttle shake). This phenomenon leads to poor suspension setups and less-than-precise steering. It also necessitates having reinforcement under the car, which brings extra weight. In most cases, it's a lose-lose situation.

The Porsche Boxster isn't most cases. Even serious drivers would consider one of these. Not least because it's a Porsche, and a relatively affordable one at that. Having its engine mounted just behind the two seats helps with the structural integrity, which also has payoffs in handling and balance. It's a different driving rhythm to the "slow in, fast out" 911, but the Boxster has its own delights.

Let's be serious, people don't really need big horsepower. Opportunities to really put that push to the pavement are rare and becoming rarer. Something with tidy handling and sufficient muscle to exploit it is going to be just as much fun, maybe even more so. Perhaps Porsche was slightly cynical when it introduced the Boxster, building something that would appeal to a greater section of the motoring public, but the company still made it worthy of the badge. Which is one heck of a badge. And it did help finances, since the car became the biggest seller until the Cayenne came along.

The Boxster, code-named 986, launched in 1996 and was developed alongside the 996 911. It's almost impossible to tell the difference looking head-on at both cars (hint: the front bumpers are slightly different). Not exactly a good thing, since those "runny egg" headlamps had just started gracing Porsche noses. These were generally considered unattractive and Porsche ditched them for the second generation. But they're really not that bad and there have been plenty of cars since with uglier headlamps.

At this point, Porsche had to stop using air-cooled engines (because of emissions regulations) and go to all water-cooled. The first Boxster came with a 2.5L horizontally opposed six-cylinder (yes, it still sounds great) making 204 hp and 181 lb-ft driving the rear wheels through a five-speed manual transmission or a five-speed Tiptronic S auto. It was upgraded to 2.7 liters, 217 hp and 192 lb-ft in 2000.

This was a good year, because that's when the Boxster S also appeared, starting life with 250 hp and 225 lb-ft of torque from a 3.2L flat-six and one extra ratio in its manual transmission. The differences in suspension between a regular model and the S are that the latter has higher spring rates (25 percent front, 23 percent rear), retuned shock absorber damping, increased toe-in stiffness through longer rear lower control arms, and increased camber stiffness from larger wheel bearings, improving stability in high-speed cornering.

The regular Boxster saw another output hike in 2003, going up to 228 hp and 192 lb-ft, while the S was raised to 258 hp and 229 lb-ft. The plastic rear window was replaced by a glass version at the same time. The yellow "yoke" in the headlamp was changed to a clear lens over the turn signal.

Examples with high miles will probably need several things replaced, like suspension parts (especially control arms), brake pads, and tires. Porsche parts aren't cheap. So buy as new as the savings allow. A good idea could be to find a car with a single owner who has looked after it properly, instead of one that might have had a few owners from various states, even if the former has more miles on the clock.

Porsche dealerships don't have a nationwide network where service records from one part of the country can be consulted in another. And a lot of owners would probably not use a main dealer anyway, preferring to use a cheaper technician.



TECH SPEC '96-'04 PORSCHE BOXSTER

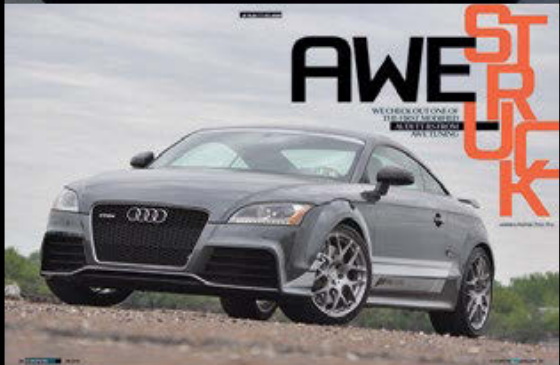
LAYOUT
Longitudinal mid-mounted engine, rear-wheel drive

ENGINES
2.5L, DOHC, 24-valve, flat-six; 3.2L, DOHC, 24-valve flat-six

TRANSMISSION
Five-speed manual/five-speed automatic (Boxster), six-speed manual (Boxster S)

SUSPENSION
Independent MacPherson struts, coil springs, antiroll bars (f & r)

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"Early engines had a pretty tough dual-row bearing, which was changed to the dodgy single-row bearing."

Speaking of which, make friends with a Porsche specialist mechanic. Close friends. Christmas card-swapping friends. Come on over for Thanksgiving kind of friends. Preferably one with a Porsche System Tester 2 (PST2) diagnostic tool. This little magic box will tell the user whether an engine has been over-revved. If it's been done too frequently, then we know the seller is, um, not the smartest or most mechanically sympathetic gentleman on the block. Porsche could also use this evidence to contest any warranty claims for a new engine.

Brake discs need to be renewed with every third change of pads; they can't be re-surfaced. Porsches are not cheap to run or buy, although a decent inspection is money well spent. Make sure it includes a laser wheel alignment to see if the car's been crashed and not repaired properly. The Boxster is known for chewing tires, but the Michelin PS2 is a fine choice.

Early 2.5 engines had issues with cylinder liners. Sadly, that's not the only thing. Owners should check regularly for oil leaks, because the rear main oil seal will fail. It's not that expensive as a component, but accessing it requires the removal of the rear bumper, exhaust, transmission, and flywheel. Those are some big labor costs right there.

The intermediate shaft regulates timing chains. The usual story is that its bearing is prone to failure. It's a little more involved than that. Early engines had a pretty tough dual-row bearing, which was changed to the dodgy single-row bearing. In 2005, it was changed again to a larger and more reliable single-row bearing. If (or rather when) a dodgy one goes pop, it's a possible engine rebuild—which basically

means selling one of your kids (what the heck? It's a two-seater anyway). Seriously, get it checked out and replaced at least when it's time to renew the clutch. Do that main oil seal too, while everything has been dismantled. Apparently, the Cayenne main oil seal will fit a Boxster and is a sturdier item. Unless someone bought a 986 Boxster new, drove it a couple of times, and then garaged it for the intervening 10 years or so, chances are most of those troubles have already been fixed. With the right oil and the right maintenance, there's no reason why these engines can't do high miles.

Some heads have cracked, some water pumps have weakened, some ignition switches have gone on the fritz, but it isn't just the greasy bits that need looking at. There should be a little Lexan windbreak between the two headrests, along with rollbar inserts. These are easily stolen when the car is parked with its top down, and driving roofless without them is miserable. Pay close attention to the state of the canvas roof and its open/close mechanism. Both sets of keys are necessary, as are manuals and tools. All these things cost a lot of money to replace. Inspect the trunk carpet around the coolant reservoir—dark spots could signal a possible leak.

In a perfect world, a late-model Boxster S would be sweet. An '03 example is blue-booked at \$8,417, bought from a private party. Alternatively, a '00 2.7 is valued at \$4,202. Real-world prices can fluctuate wildly, though.

A look on the local Craigslist found an (admittedly good-looking) '03 S with 65,600 miles, a Bose audio system, and an asking price of \$15,500. At the same time, there was a '00 2.7 with 35,000 miles priced at \$13,500. In that example's favor, it does have the dual-row IMS bearing and the owner had kept all the service records, plus the old oil filter to show that there were no little bits of debris in the engine.

Do the homework and make sure you have a firm grasp of what is a decent price. A few sellers appear to have overly optimistic ideas about how much their cars are worth. It's been said before, but it's worth repeating: Get any potential purchase checked over by a specialist. Digest as much information as possible before and after buying. This is a commitment, but it's worth it. Life is too short not to own a Porsche at some point. A Boxster could be just the right one. **EC**

PERFORMANCE

PEAK POWER

204 hp @ 6,000 rpm ('96 2.5), 217 @ 6,500 rpm ('00 2.7), 250 hp @ 6,250 rpm ('00 S), 228 @ 6,300 rpm ('03 2.7), 258 hp @ 6,250 rpm ('03 S)

PEAK TORQUE

181 lb-ft @ 4,500 rpm ('96 2.5), 192 lb-ft @ 4,500 rpm ('00 2.7), 225 lb-ft @ 4,500 rpm ('00 S), 192 lb-ft @ 4,750 rpm ('03 2.7), 229 lb-ft @ 4,500 rpm ('03 S)

0-62 MPH

6.1 sec. ('96 2.5 manual), 6.6/7.4 sec. ('00 2.7 manual/Tiptronic), 5.9 sec. ('00 S), 6.4/7.3 sec. ('03 2.7 manual/Tiptronic), 5.7/6.4 sec. ('03 S manual/Tiptronic)

TOP SPEED

149 mph ('96 2.5 manual), 161/158 mph ('00 S manual/Tiptronic), 155/152 mph ('00 2.7 manual/Tiptronic), 157/154 mph ('03 2.7 manual/Tiptronic), 164/160 mph ('03 S manual/Tiptronic) 2.5 engine need 0-62 times, manual/Tiptronic top speed manual/Tiptronic hp @ rpm, lb-ft @ rpm

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